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AND ENGINEERING JOURNAL.

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Currente Calamo.

We fear the new transit rates will materially increase the cost of building and delay housing. The carriage of bricks, cement, concrete, and tiles will be increased by 40 per cent., plus a flat-rate addition of 3d. a ton. For timber, if charged by actual machine weight, the increase is 50 per cent., with a flat-rate addition of 6d. per ton; if carried by measurement weight, it is 60 per cent., with a flat-rate addition of 1s. per ton. The cost of the carriage of road-making materials and other specialities will also be considerably increased. It is contended, we know, that the railways must be made to pay for themselves, and that larger payments by traders should reduce and extinguish the charge on the Exchequer; that the country will be paying no more than it now does for the carriage of goods; and that the collection of money from the users of the railways should be a simpler and cheaper matter than gathering it from taxpayers and subsequently paying it over to the railways. That may be so; but it will be some time, we fear, before a Chancellor of the Exchequer will be in a position to pass the benefit on to the taxpayer; and meanwhile our past experience of railway companies, except under the compulsion of competition, is not conducive to any lively gratitude for favours to come at their hands!

Messrs. Odham's, Limited, are to be heartily congratulated on their issue of the first number of their excellently conceived and admirably produced shilling monthly, "The Ideal Home." Its scope embraces all the conditions of the subject of its title from housing to the smallest detail of interest to the home-lover, including decorations, furnishing, draperies, floor coverings, painting, stencilling and colouring, lighting, heating, ventilation, sanitation, labour-saving devices, gardening, garden architecture, nursery appointments, domestic pets, cookery, motor notes, household hints, etc. The copious and artistically produced illustrations include the home of Mr. and Mrs. Seymour Hicks, the "Wooden Walls of Old England," a fine cross-gable-painted example of the "Priest's House, Prest-

bury"; the riverside home of Lady Do Frece, a thatched cottage residence, by Mr. H. M. Luyken, A.R.I.B.A.; a charming bungalow residence; an illustrated article on the conversion of Army huts into residences; another on "Furniture for the Homes of To-day," by Mr. H. E. Binstead; a paper on "Practical Stencilling," by Cecile Frances Lewis; "Garden Chatter," by Mr. Norman Hurst; one on "Decorative Streets"; Poultry Notes; Bees; a one-room bird-house; dog breeding for pleasure and profit; cookery, by Mrs. Tom Gallon; rabbits; the car of the country house; and electricity in the ideal home. Other features combine to render the issue a solid guarantee of the success of a publication that will take high rank as a guide to domestic comfort and beauty, and at once find a permanent place on the tables of all who value them, and of the thousands it will add to their ranks.

House building for ex-service men has been suggested in Birmingham on what seem practical lines, formulated by the General Purposes Committee, and made known last week. The total number of unemployed in the city (excluding men thrown out of work through the moulders' strike) is 13,200, comprising 10,191 men, 2,745 women, 146 boys, and 118 girls; and of the men unemployed the proportion of ex-service men to civilians is approximately four to one. In response to inquiries, several Departments of the Council have intimated their ability to provide work for some of these, and Mr. Dalley, of the Employment Exchange, was further of the opinion that the only chance to absorb these men was to train them for some trade. Under the Government schemes a portion of the disabled men, who ought to be absorbed first, are now being trained as bricklayers, carpenters, plumbers, painters, and plasterers, and it was hoped that the majority of such trainees could, and would eventually, be absorbed in the building trade. At present the men spend about six months at the Instructional Factory or Technical School, and from eighteen months to three years with private employers to complete their training. It was suggested that the Housing Committee should arrange for about six or eight houses to be built by the men who are training in the various branches of the building trade. These

trainees would work under competent instructors on one of the committee's sites. The pay of the men is already settled by the Government, who give a training allowance of £2 per week, with further allowances in respect of wife and children. When a man goes into a workshop he is probably of not much use to his employer, who is required to pay him only a small sum, ranging from 10s. to 20s. per week, for the first three months, the Government deducting the amount so paid by the employer from the man's training allowance. After a further three months the employer may be required to pay a larger amount, the Government making up this amount to the training allowance. Under this scheme it would be necessary for the Housing Committee to clear the site and prepare the ground for actual building operations, and also provide all the materials. The Housing Director suggested that a suitable site could be acquired for this experiment. The chairman of the Housing Committee undertook to bring the matter before his committee, and the matter has been discussed and referred to a special committee for further consideration.

The Executive Committee of the India Society appeals not only to members of the Society, but to all who desire to promote the co-operation of the East and the West in things of the spirit, to aid in carrying through an important undertaking for which the times appear to be ripe. In the year 1917 the School of Oriental Studies was founded in London. The committee of the Society have, with the cordial approval of the Governors of the School of Oriental Studies, decided to open a fund for the endowment, in connection with that institution, of a Lectureship in Indian Art. The school has at present no provision for the study of the arts of the East, though His Majesty, in his opening address, clearly forecasted the necessity for such provision, especially in relation to the arts of India, as an essential feature in the work of such a body. This arises simply from the fact that the present endowment of the school has only permitted it to attend to the most urgent necessities. It is evident, however, that any programme of Oriental studies in which art found no place must, from the point of view of human culture, lack one of its most vital and interesting features. The India Society will endeavour, so far as Indian

art is concerned, to supply this defect. If our undertaking is successful, as we cannot doubt it will be, we shall have cut one entirely new channel of communication between what is finest, most sincere, and most humane in the spirit of England and of India. Much water will flow through this channel; it will grow wider in time; and new channels will be formed. We are now asking our members, and all friends of the cause for which we stand, to help us with a will in this piece of pioneer work, assured that the definite and modest object which we have before us in this appeal is one pregnant with great possibilities for the future good relations of East and West. The establishment of the lectureship in question will, we understand, call for a capital sum of about £4,500. We trust that the recipients of this appeal will not only send some contributions, great or small, to the fund, but will spread the knowledge of it among their friends, and will use every effort to bring the undertaking rapidly to success. Further information can be had on application to the hon. secretary and treasurer of the India Society, Mr. T. W. Rolleston, 16, Prince Arthur Road, Hampstead, London, to whom also contributions to the fund should be addressed.

The general question of engineers' and architects' work has been discussed by the Montreal branch of the Engineering Institute of Canada, the discussion being based on a report that the county authorities at Pittsburgh had given commissions to two firms of architects to design and supervise the construction of two large bridges, one with a 500 ft. span. Written comments by members on the subject were read. These, with one exception, were emphatic in their condemnation of this action, and some members even advocated a policy of boycotting should the practice become more general. Fortunately the discussion at the meeting was on more conciliatory lines, the general view being that the subject was one for co-operation, not for measures which would create antagonism between the professions. It was frankly admitted by Mr. Beaupré-Champagne and Mr. Hugh Vallance, of the Province of Quebec Architects' Association, that such large bridges as were referred to were within the province of engineers, but it was pointed out that many bridges designed by engineers were lacking in beauty, which defect could have been obviated by consulting architects. Each profession had its own field, and when an engineer, in designing a bridge, desired to make it architecturally beautiful, he should call in an architect as consultant. Mr. F. W. Tye expressed the opinion that while the design of bridges was a matter for engineers, the latter had often sadly lacked a sense of æsthetic beauty in making their designs. Some of the bridges, he declared, were downright ugly. Times had changed, and now people were looking for beauty as well as utility. It is satisfactory to find that personal contact at the meeting between representative engineers and architects developed a spirit of co-operation rather than one of mutual distrust

and recrimination, which would certainly have resulted had the views of some engineers who participated in the written discussion prevailed.

Not the least welcome evidence of the revival of the useful helps to business to builders and all who catered for them in pre-war days is the announcement that reaches us from Mr. H. Greville Montgomery, 43, Essex Street, Strand, W.C.2, that the International Building Trades Exhibition will be held at Olympia from April 10 to April 24, 1920. This will answer several inquiries that have reached us during the last few days; and, doubtless, further particulars will be announced before long.

ARTIFICIAL LIGHTING AND INDUSTRIAL EFFICIENCY.

Maximum efficiency in any industrial operation is impossible without sufficient illumination. This is generally realised in regard to natural lighting, and modern factories are constructed with walls consisting almost entirely of glass. Sometimes saw-tooth or "north-light" roofs are employed. In all cases the object of providing for good natural lighting is simply to make vision absolutely comfortable and efficient.

In view of the amount of care taken by the present-day architect in regard to natural lighting, which costs nothing, it is illogical that less attention should be given to artificial lighting, which has to be paid for. It is, of course, true that the majority of factories only operate in the daytime, but for all that, it is probable that during the year the average daily period of artificial lighting in British factories is at least two hours. In individual cases as much as 50 per cent. of the working time is spent under artificial lighting. As a fair average, it may be taken that during 25 per cent. of the working period artificial light is necessary. This percentage will tend to increase owing to the gradual extension of the multi-shift system.

At the least, therefore, artificial lighting will affect 25 per cent. of the working time, and in the future it may influence from 50 to 75 per cent. The question of artificial illumination in factories is clearly one which we cannot afford to neglect.

THE AMOUNT OF WORK DONE UNDER ARTIFICIAL LIGHT.

It is interesting to note that, according to recent estimates, only about 17.5 per cent. of the total output is produced during this 25 per cent. period of artificial lighting. In other words, the operatives cannot work so quickly by artificial light as by daylight, and, on the average, only produce one-sixth of their output during the post-daylight quarter of the day. What does this mean? Surely it means that the average standard of artificial lighting is so far inferior to average daylight as to cause a 40 per cent. reduction in working efficiency. And the obvious remedy for this condition lies in the improvement of artificial illumination to an extent which shall permit the worker to see as well and comfortably by night as by day.

THE APPLIANCES OF GOOD LIGHTING.

Ten years ago—even five years ago—it would have been difficult, in fact almost impossible, to have provided artificial lighting of daylight quality. The requisite

appliances were simply not available, or, at least, not available in a form suitable for industrial use. To-day the situation is entirely changed. The invention in 1914 of the half-watt type of incandescent electric lamp placed at the disposal of the architect and illuminating engineer a lighting instrument of incalculable value. Up to that time the only high-power electric lighting unit was the arc lamp, which, owing to its complexity, its need of constant attention, and the fluctuating quality of the light, was a very poor substitute for daylight. On the other hand, there was the ordinary metal filament lamp, which became extremely popular and, owing to its superior efficiency, completely ousted the old carbon filament lamp. But the metal filament lamp, although it made possible a great advance in the standard of factory lighting, was not available in a sufficiently large range of sizes to meet the requirements of daylight effectiveness.

The half-watt incandescent electric lamp is the ideal light source for which the industrial world has been waiting. It is made in a number of sizes, from 60 watts up to 1,500 watts (approximately 120 to 3,000 candle-power). In all essentials it is an ordinary metal filament lamp, burning with absolute silence, and requiring no attention. It is, however, twice as economical as the metal filament lamp. The half-watt lamp, therefore, provides a light source with the simplicity, safety, and convenience of the ordinary incandescent lamp, coupled with the big lighting possibilities of the arc lamp. In addition, it gives a brilliant white light which approximates closely to daylight. This lamp, during its five years' existence, has worked a revolution in factory lighting, and has made possible intensities of illumination which were not previously considered practicable.

But that is not all. Concurrently with improvement in lamps, equal improvements have been made in the design of reflector equipment. Now the reflector, whether it take the form of metal reflector or a glass reflecting bowl, performs, or should perform, two very useful functions. One is to screen the brilliant filament of the lamp from the eyes of the workers, and the other is to redirect and distribute the light so that there is maximum illumination on the working plane.

In the old days, with small, inefficient lamps, either bare or fitted with ordinary shades, it was necessary to have the light near the work. This, of course, is the very antithesis of daylight. The best kind of daylight for any kind of work is that which comes through a "north-light" or saw-tooth roof, and if we are to get the daylight effect into artificial lighting that is the condition we must imitate. This could not be done with small units, but it can be done with the high-powered half-watt lamp.

Modern practice tends more and more in the direction of general overhead lighting by means of large units. In a large interior this system can be employed to the fullest advantage. For example, an aeroplane factory was very successfully lighted by means of 1,000 watt half-watt lamps in diffusing bowls suspended at a height of 20 ft. and spaced 30 ft. apart. The total effect of the illumination was very similar to daylight, and from the productive point of view it was found that, providing the light was switched on before daylight had failed perceptibly, there was no slackening in output. Indeed, the workers hardly seemed to realise the change from daylight to artificial light, and, so far as could be judged, the day-

time speed and accuracy of working were maintained throughout the night shift.

PRODUCTIVE INTENSITY.

Another thing which has undergone considerable change as a result of the invention of the half-watt lamp and its application to industrial lighting is our conception of what constitutes a proper intensity of illumination. A few years ago an average intensity of 2-ft. candles was considered almost extravagant. Experience has shown that far higher intensities are frequently and, indeed, generally desirable, and nowadays in many factories which have put their lighting on a productive basis it has been found advantageous to employ intensities of from 6 to 12 ft. candles.

Experiments have demonstrated that, within reasonable limits, productive efficiency increases in proportion to the intensity, and in some cases, as a result of doubling an illumination which appeared fairly good, averaging, say, about 4 ft. candles, a 10 per cent. increase in output has been achieved.

EFFECT ON PRODUCTION.

A number of tests have been made recently with a view to ascertaining the actual effect on production of improved lighting of the kind described above. These tests covered a period of two months. First of all, complete records were kept of the time spent on every operation under the old lighting. At the end of a month the old lighting was removed and half-watt type electric lamps in reflectors or diffusing bowls were substituted, the illumination being considerably increased in all cases, and also more thoroughly diffused. Full production records were kept for a second month under the new lighting. On a comparison of the figures, which, incidentally, were compiled by perfectly impartial engineers who had no interest in proving a case, it was found that the improved lighting had brought about an increase in production varying between 8 and 30 per cent., according to the nature of the manufacturing process involved. The average increase for all the tests was 15 per cent.

LIGHTING AND SAFETY.

Statistics show that the majority of industrial accidents occur during the period of artificial lighting, and it is impossible to escape the inference that this tragic discrepancy is largely due to inadequate illumination. This view is certainly taken by the Government—or, rather, by the Government Commission which reported in 1915 upon the subject of industrial lighting. This Commission recommended the statutory enforcement of certain minimum standards of illumination, with the object of safeguarding the workers. This recommendation has not yet become law, but that it will do so in time is unquestionable. In America and Germany the authorities have already legislated on this matter.

The value of good lighting in the prevention of accidents to personnel and machinery is evident. With proper illumination the workmen are enabled to see clearly the moving parts of machines, to make quick and accurate movements, and generally to preserve a sense of confidence which in itself is a safeguard. In a badly-lighted works, anything piled on the floor in passages and alley-ways, such as raw materials, finished and unfinished articles, rubbish, etc., is apt to be dangerous. Workmen may stumble over these things, and even if they do not collide with belting or moving machinery, may receive an injury from an ordinary straight fall. Personal safety often de-

pends upon the careful adjustment of machines, and careful adjustment is impossible by inadequate light.

From the safety point of view there is everything to be said in favour of good lighting.

GOOD LIGHTING AND THE WELFARE OF THE WORKERS.

In what may be called its welfare aspect, good lighting has an equally important influence. Doctors and hygienists agree as to the mental and physical benefits of good artificial lighting. If the illumination is poor and inadequate, the spirits and health of the workers are bound to be adversely affected. On the other hand, a bright, cheerful light has an uplifting effect which, apart from the question of better vision, already discussed, reacts beneficially on productive efficiency. From this point of view it is desirable not only to provide sufficient illumination on the work itself, but also to light the whole interior to a degree of pleasant and comfortable brilliance.

A poorly-lighted factory is often a dirty factory. Rubbish and dust tend to accumulate in dark corners and passages. Good lighting makes this impossible, or at least improbable. Workmen will not allow a brilliantly-lighted shop to become the scene of dirt and disorder. In effect good lighting and dirt are incompatible—they cannot live together.

THE LONDON COUNTY COUNCIL HOUSING SCHEME.

WELL DESERVED PRAISE OF THE ARCHITECT AND COUNCIL'S OFFICERS.

It is highly satisfactory to know that the splendid work done in the past for Housing by the London County Council, and its successive Housing Committees, and the late superintending architect, is being excellently continued by the Council and its present architect, Mr. George Topham Forrest, F.R.I.B.A. At the last meeting of the Council before the recess, the able chairman of the Housing Committee, Mr. Bernard Holland, in introducing his report, remarked on the great progress that had been made, and said it was due to the great vigour which the officials had put into the matter. He was particularly pleased with the work done by the architect, and very much impressed by the way in which he had tackled the problem. He referred to the architect's persistence—a Scottish characteristic—and pointed out how he had succeeded in impressing his views on the Government officials concerned. As a result of his endeavours the Council no longer submitted its schemes to the London Housing Board, but dealt direct with very capable officials at the Ministry of Health.

The Rev. Scott Lidgett said he would like to join with Mr. Holland in congratulating the Council on the admirable start made by the Architect to the Council. He was confident that soon it would be utterly impossible to reproach the County Council on the matter of housing.

Mr. George Dew also made a speech in which he referred to the very capable officials in the Council's services.

The report was received, as follows:—

On July 15, 1919 (pp. 879-881), the Council approved a scheme under section 1 (i) of the Housing, Town Planning, etc., Act, 1919, for the provision of dwellings for the county of London and for the improvement of the housing conditions therein.

With that object the Council has undertaken to complete the development of the existing estates, viz., Old Oak estate in the metropolitan borough of Hammersmith, Norbury estate in the county borough of Croydon, and White Hart Lane estate in the urban districts of Tottenham and Wood Green: and also to acquire and develop lands at Roehampton and Bellingham and in the Dagenham district, and to carry out schemes for the clearance and reconstruction of a num-

ber of insanitary areas. A vast amount of preliminary work involving much time and labour has been carried out, and as the Council will no doubt desire to be informed of the position arrived at within the first five months of the operations, we submit the following summary.

Proposals for the erection of houses and the acquisition of sites have been submitted to the Council from time to time, and estimates of the expenditure involved have been approved by the Council for the purposes indicated below:—

Estate or site.	Purpose.	Amount.
(i.) Roehampton..	Purchase of property	£ 121,625
(ii.) Roehampton..	Erection of houses, construction of roads and sewers and general development.....	1,300,000
(iii.) Dagenham ..	Purchase of property and partial development	1,000,000
(iv.) Bellingham ..	Purchase of property and partial development.	108,000
(v.) White Hart Lane.....	Erection of houses and construction of roads & sewers	1,200,000
(vi.) Norbury.....	Erection of houses, completion of road surfaces & development ...	275,400
(vii.) Old Oak	Do. do.	576,565
(viii.) Tabard Garden	Erection of dwellings	75,000
Total..		£4,656,590

CONTRACTS.

Contracts for building work on these estates have been entered into as follows:—

Estate.	Contractor.	Amount.
(i.) Old Oak (130 houses and 2 shops)	Allen Fairhead and Son	£89,998
(ii.) Old Oak (91 houses)	Holliday and Greenwood, Ltd.	Actual cost of labour and materials plus £5,500 for plant, profit, etc.
(iii.) Norbury (144 houses)	Rowley Brothers	£108,980
(iv.) Tabard - garden (block dwellings with 250 rooms).	Walter Lawrence and Son, Ltd.	£62,943

NEW ESTATES.

Roehampton.—The contract for the purchase of the Roehampton estate, 147 acres in extent, has been completed, and the lay-out plan, as well as type plans of 1,194 houses to be erected on the area to be devoted to working-class development, have been approved by the Minister of Health. Working drawings for roads and houses are in course of preparation. Tenders for the construction of the roads are about to be invited. Arrangements will be made for building operations to be commenced as soon as the necessary progress with the road work shall have been made, and the contracts for roads and buildings will then proceed simultaneously.

Bellingham.—The Council on November 11, 1919 (pp. 1416-17), decided to acquire a site of 250 acres at Bellingham for mixed development subject to the approval of the Minister of Health. The decision of the Minister is being awaited, and in the meantime terms of purchase have been agreed with the owners of nearly 48 acres. The lay-out plan for the whole site, as well as the scheme of development for the first section, have been prepared in anticipation of approval of site.

Dagenham.—On October 21, 1919 (pp. 1257-8), the Council made a compulsory order for the purchase of about 3,000 acres of land for the provision of about 24,000 houses in the urban districts of Barking Town and Ilford and in the parish of Dagenham in the rural district of Romford. After compliance with statutory requirements application was made to the Minister of Health on November 10 for confirmation of the order. Objections received from local authorities and persons interested in properties proposed to be acquired are being considered by the Minister. Difficulties have also arisen with regard to certain lands within the area vested in or held by the Essex County Council with a view to their appropriation for small holdings under the Small Holdings Acts. It is hoped that these difficulties will soon be met and that the confirmation of the Council's

order by the Minister of Health will not be much longer delayed.

EXISTING ESTATES.

Old Oak.—Good progress has been made with the erection of houses under the contract with Messrs. Allen Fairhead and Son (130 cottages and 2 shops), over 200 men being at present employed. Difficulty was at first experienced in obtaining an adequate supply of materials. It is anticipated that some of the houses due for completion in February, 1920, will be completed early in January. A large number of other houses are in various stages of erection.

Work has been commenced under the contract with Holliday and Greenwood, Ltd., for the erection of 91 houses, and the number of men employed is about 60.

As regards the remainder of the estate, particulars for tender for the erection of 418 houses are being sent to applicants, and tenders are to be received not later than January 12, 1920. Revised plans of eighteen model cottages to be erected by arrangement with the Minister of Health, together with specification and bills of quantities, are being prepared with a view to tenders being invited.

Norbury.—Satisfactory progress is being made under the contract with Messrs. Rowley Brothers for the erection of 144 houses on the Norbury estate, several houses being up to first scaffold level. The number of men employed is about ninety. The question of the extension of the contract to include remaining 116 houses and two shops is under consideration, plans having been approved by the Minister of Health.

White Hart Lane.—Drainage plans have been approved by the Tottenham Urban District Council, but progress with the construction of roads and sewers has been delayed owing to the refusal of the Wood Green Urban District Council to approve plans. Appeal has been made to the Minister of Health, and action is being taken with a view to expediting a settlement so as to enable tenders to be invited at an early date.

Tabard Garden.—An order to commence work under contract with Walker Lawrence and Son, Ltd., for dwellings for 500 persons on second section was issued on November 24, and building operations have been commenced. Preliminary plans of dwellings for 1,460 persons to be erected in fulfilment of rehousing obligation after those on second section have been prepared and are under consideration.

INSANITARY AREAS.

Schemes are in course of preparation for the improvement of certain insanitary areas which have been officially represented to the Council by the local medical officers of health, and other representations are being investigated.

Following upon certain suggestions made by the Minister of Health, we have approved the lines of a revised scheme for dealing with the Brady Street area, Bethnal Green. We are consulting the Bethnal Green Metropolitan Borough Council upon the details of the scheme, and we hope to be in a position to submit our proposals to the Council immediately after the Christmas recess.

BERNARD HOLLAND, Chairman.

THE R.I.B.A. EXAMINATIONS.

THE FINAL: ALTERNATIVE PROBLEMS IN DESIGN.

1. The drawings, which should preferably be on uniform sheets of paper of not less than Imperial size, must be sent to the Secretary of the Board of Architectural Education, Royal Institute of British Architects, 9, Conduit Street, W., on or before the dates specified below.

2. Each set of drawings must be signed by the author, and his full name and address, and the name of the school, if any, in which the drawings have been prepared must be attached thereto.

3. All designs, whether done in a school or not, must be accompanied by a declaration from the student that the design is his own work and that the drawings have been wholly executed by him. In the preparation of the design the student may profit by advice.

4. Drawings for subjects (a) are to have the shadows projected at an angle of 45° in line, monochrome, or colour. Drawings in subjects

(b) are to be finished as working drawings. Lettering on all drawings must be of a clear, scholarly, and unaffected character.

SUBJECT XLIX.

(a) An Elliptical Grand Staircase and Vestibule in a Gentleman's House.—The candidate is to indicate the rooms adjoining the staircase.

Drawings.— $\frac{1}{2}$ -in. scale: one plan and two sections.

(b) A Factory on an Island Site Outside the London Area.—Building to be 100 ft. square and have six floors, the top floor to carry machinery (4 cwt. per square foot). The whole to be fireproof.

Drawings.— $\frac{1}{2}$ -in. scale: plan, elevation and sections. $\frac{1}{2}$ -in. sectional detail.

SUBJECT L.

(a) A Town Church to Seat 800 Persons.—Material, ferro-concrete. Corner site.

Drawings.— $\frac{1}{2}$ -in. scale: plan, section and two elevations. $\frac{1}{2}$ -in. detail.

(b) A Dairy Farm for 100 Cows: with Bailiff's House.

Drawings.— $\frac{1}{2}$ -in. scale: plan, sections and two elevations.

SUBJECT LI.

(a) A Memorial "Open Access" Library on Corner Site.—70 ft. square. Rooms: Newspaper, reading, magazine, reference library. Small museum, small lecture room. Stock room in basement.

Drawings.— $\frac{1}{2}$ -in. scale: plans, elevations and two sections. $\frac{1}{2}$ -in. detail.

(b) A Permanent Canteen for a Works, with Simultaneous Seating Accommodation for 600 Men and 600 Women. No waiting.

Rooms: Rest and smoking rooms. Kitchen and all necessary offices. Lavatory accommodation for kitchen staff. Manager's office.

Drawings.— $\frac{1}{2}$ -in. scale: plans, sections and elevations.

DATES FOR SUBMISSION OF DESIGNS IN 1920.

	Subj. XLIX.	Subj. L.	Subj. LI.
United Kingdom ..	Feb. 28	April 30	June 30
Johannesburg	April 30	June 30	Aug. 31
Melbourne	May 31	July 31	Sept. 30
Sydney	May 31	July 31	Sept. 30
Toronto	Mar. 31	May 31	July 31

THE SOCIETY OF ARCHITECTS.

The President and Council announce that the Parliamentary Secretary of the Ministry of Health, Major the Right Hon. Viscount Astor, and Lady Astor, M.P., will be the chief guests of the society at a luncheon to be held in the Balmoral Rooms of the Trocadero Restaurant, Piccadilly Circus, W., at 12.30 p.m. for 1 o'clock, on Thursday, January 8, 1920.

The chair will be occupied by the president, Mr. E. J. Sadgrove, who will be supported by representatives of kindred societies and of Government departments and other public bodies.

The gathering will of great interest, and will afford an opportunity of bringing to the notice of the representatives of the Ministry of Health the views of the society on the housing question, and of the position of architects in relation thereto. Members may bring visitors, including ladies.

As the accommodation is limited, application for tickets for the luncheon, price 12s. 6d. each (not including wines), should be made to the secretary, Mr. C. McArthur Butler, F.C.I.S., 28, Bedford Square, W.C.1, before January 3, 1920. Seats will be allotted in order of application.

COMPETITIONS.

"DAILY MAIL" HOUSING COMPETITION.

Four hundred pounds in prizes to architects was recently offered by the *Daily Mail* with a view to obtaining the best design for a house which would save work instead of making work. The winners are:—First Prize, £250, Mr. C. J. Kay, Lic.R.I.B.A., Rank Chambers, Horsham; Second Prize, £100, Mr. G. Berkeley Mills, A.R.I.B.A., 7, Stone-buildings, Lincoln's Inn, W.C.; Third Prize, £50, Mr. E. W. Armstrong, R.I.B.A., c.o. Architectural Association, 35, Bedford-square, W.C. Specimen rooms, based on the design of Mr. C. J. Kay, winner of the first prize, will be erected at the *Daily Mail* Ideal Homes Exhibition at Olympia next month.

FORMULÆ FOR ART.

Why is a Greek statue, a Greek building, a Greek vase, of the "best period," more beautiful than a statue, a building, a vase, of any other period or nationality? Who (asks the *Times*) shall entangle beauty in the meshes of a net? Many have tried. Vitruvius, a Roman of the first century B.C., believed that the Greeks applied a linear modulus to architecture and sculpture, and that the secret of their art lay in following a proportion revealed in the ratio of the height of the head to the whole stature of a "perfect" male body. Leonardo da Vinci, mathematician, anatomist, and artist, discovered, on mathematical principles, a ratio of linear proportion that he called *sectio divina*, the divine sub-division, to which the astronomer Kepler, later on, assigned a far-reaching, almost mystical, significance. In our own time, Sir Theodore Andrea Cook, studying the spiral in nature and in art, insisted that the form of curve known as the logarithmic spiral was a measure of beauty corresponding with the inborn rhythm of our nature. Some weeks ago the *Times* published an account of a theory of Greek art propounded to the Society for the Promotion of Hellenic Studies by Mr. Jay Hambidge, an American scholar and archaeologist, who has developed his idea in fifteen years of patient study. The Hellenists were deeply interested, adjourned the discussion for a month, and appeared to accept the theory as at least a valuable and suggestive hypothesis of the principles of Greek art. In the *Times Educational Supplement* last week it published what it believes to be the first simple and authoritative account of Mr. Hambidge's theory of "dynamic symmetry." Copies of the *Supplement* may be obtained, price 2d., post free, from the Publisher, Printing House Square, E.C.4.

He starts with the proportions ascertained to exist in the body of a "perfect" man. If such a man be placed in a rectangle of which the length is his stature and the width the span of the outstretched arms, then the height of the rectangle is to its width as 2 to 2.236—that is to say, as 2 to the square root of 5. He finds that this mathematical relation expresses many other proportions of the human body, and appears to govern the architecture of the Parthenon. A second significant rectangle has its height and width in the proportions of Leonardo's *sectio divina*. It is said to be the key to the arrangement of the leaves of plants as shown in the pattern of the seeding sunflower, to other proportions of the human body, and to the major and minor expressions of Greek art.

How far the rules of "dynamic symmetry" correctly interpret Greek art (says the *Times*) is a question for experts. There is evidence that the proportions came to Greece from Egypt, and Egypt was an ancient home of geometry. But we may doubt whether the rectangles, however they may apply to sculpture, have any inevitable relation to the organic world. The proportion of the span of the arms to stature varies racially and individually, and correspondence with the square root of five is true only of selected cases. The symmetry of the sunflower is not observed by the buttercup, or the fir-cone, or the orchid. Is the one more "perfect" or more beautiful than the other? Nor can we agree that Greek art is the only perfect expression of beauty. Not so long ago the cold purity of Greek sculptured marble was held out as one of the most admirable expressions of the Greek genius. But the view that it was covered with pigment, once deemed an insolent heresy, is almost established. There is even a revulsion from the conception that the art of the age of Pericles was the highest accomplishment of Greece, and many are going eagerly back to the vitality of the more primitive periods, precisely to Greek art devoid of "dynamic symmetry." If the rectangles be the secret of Greek art, many will find in the present discovery a justification for their sense of relief when they pass to erections free from such a rule. A formula, they will say, may be the secret of a convention, but not of beauty.

The Martley Rural District Council have appointed Lieut. C. T. Chadwick as surveyor, with a salary of £250, rising to £300.

THE DAILY MAIL IDEAL LABOUR- SAVING HOME COMPETITION.

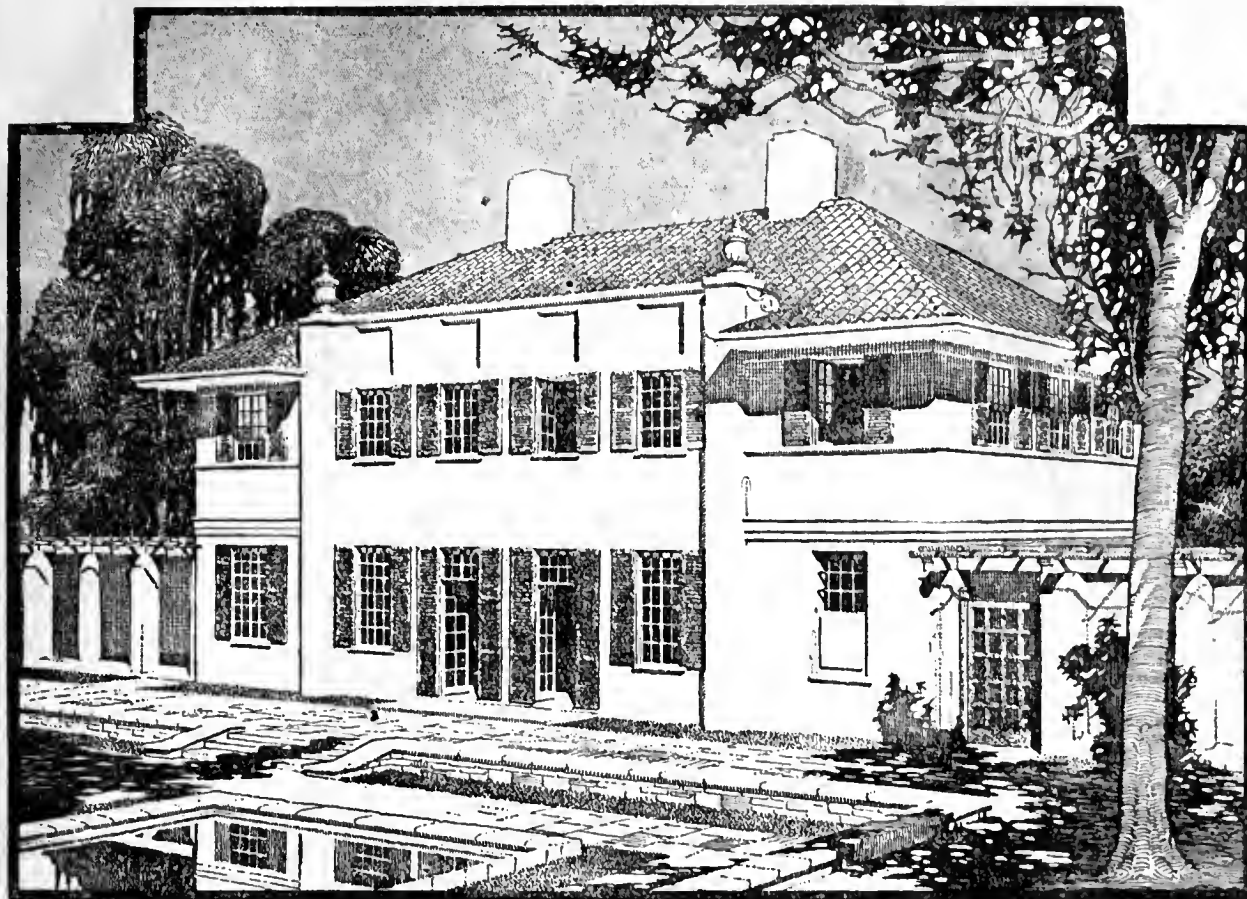
On another page under "Competitions" we give the award of the prizes offered in this competition, and herewith illustrate the First Prize Design, for which £250 was

a tradesman calls to receive orders or to deliver goods; the cleaning of fire-places is not necessary, nor do fuel and ashes have to be carried up and down stairs; the sweeping of carpets on stairs and passages is done away with.

Mr. Kay claims to have chosen a type of

as possible, and the simple outline adhered to in the architecture is looked upon to contribute materially to lessening the total cost.

To begin with, there is not a dust harbour in the house. All angles are rounded, and mouldings are practically eliminated. Surfaces of walls, floors, ceilings, doors, and



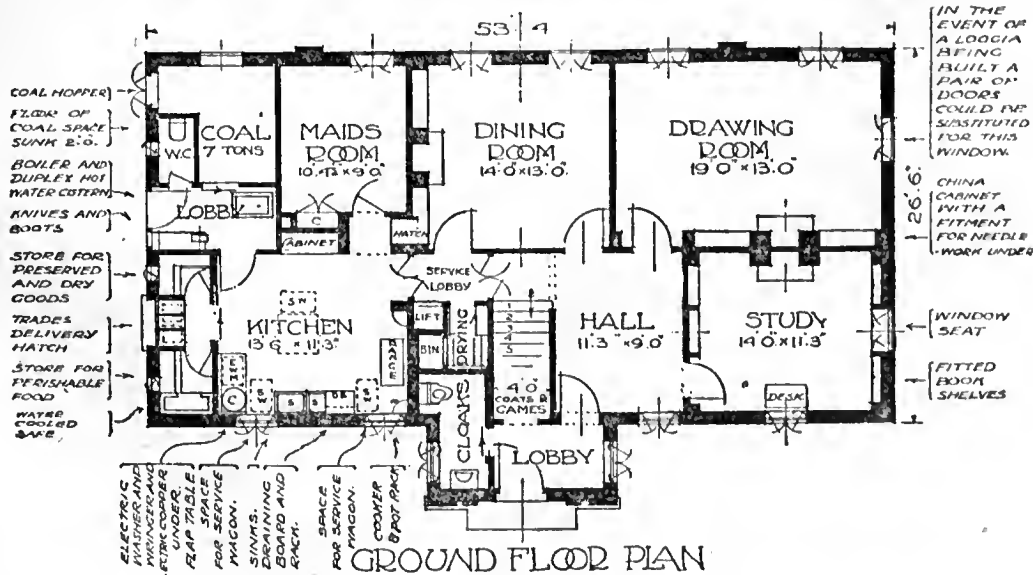
First Prize. The Garden Front.

awarded to Mr. C. J. Kay, L.R.I.B.A., Bank Chambers, Horsham. We shall illustrate the other two prize designs in an early issue.

Mr. Kay, the winner of the First Prize, has endeavoured to evolve a scheme which shall greatly tend to reduce effort and labour

house most generally sought after by the average family. It contains three reception rooms and the usual accommodation of a medium-sized suburban house. Where he scored is in the arrangement of his rooms, the position of the fittings, and the addition

windows can be readily and easily cleaned without damage to the decoration. Bright metal fittings are done away with, and heating, cooking, and washing appliances are enamelled. The floors are damp-proof, warm, silent, and restful to the feet. The windows



First Prize. Note the strategic position of the kitchen.

without creating prejudice by making aggressively apparent the necessary drastic departures from ruling conventions.

According to the assessors, there is no dusting of innumerable banisters; the back door does not have to be answered every time

of very many small, thoughtfully contrived methods of doing away with household drudgery. In view of the proportionately heavy cost of fittings and accessories he has kept down cost of actual building to a minimum. Inexpensive material is used in so far

as possible, and the simple outline adhered to in the architecture is looked upon to contribute materially to lessening the total cost.

In the kitchen the various appliances are so grouped that a minimum of labour is required for the reception and disposal of

stores, the preparation and service of food, and washing and house cleaning operations. Here, for instance, one finds the trades delivery hatch provided with self-locking compartments to receive packages from the butcher's boy or the baker, and slate panels on the doors on which messages and instructions to tradesmen may be written, thus precluding the necessity of running to the back door every time a delivery van calls.

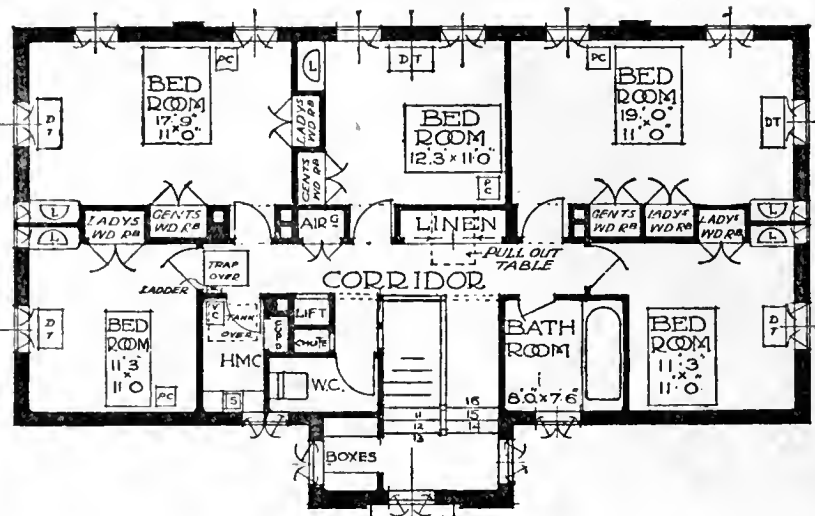
The whole of the kitchen equipment is fixed on brackets or stands on ball-bearing castors, thus facilitating the cleansing of floors. An electric range, also on castors, so that it may be moved, has adjustable legs so that it may be higher or lower to accommodate the physical proportions of the cook. The kitchen cabinet is entirely enclosed by folding doors, or a roller shutter, and is designed to accommodate articles and provisions most frequently required in the preparation of

OBITUARY.

Mr. Frederick William Davis, R.I., of Oakley Villa, Witton, Droitwich, late of Hamstead Road, Handsworth, died suddenly after a short illness on Sunday, December 21. He was born at Handsworth, and received his education as an artist at the Birmingham School of Art, and in 1881 entered the Académie des Arts in Antwerp, where he remained for two years, studying painting under Professor Charles Verlat. In 1883 he moved on to Paris, where he entered Bognereau's studio, and worked at anatomy at the Beaux Arts for eighteen months. He then came back to Birmingham, but soon returned to Paris, and took a studio of his own, and soon enjoyed a rapidly-growing reputation through the pictures he exhibited with the Birmingham Royal Society of Artists and at other provincial exhibitions, as well as in London. In 1891, at the exhibition held at Swansea in con-

We regret to announce the death, on the 23rd ult., from septic poisoning, at Withean Road, Brighton, of Mr. Osmond Dwnay, second son of the late Sir Archibald D. Dwnay, and director and secretary of Archibald D. Dwnay and Sons, Ltd., aged 47. He was buried last Saturday at Patcham Churchyard, Brighton. The sympathy of all clients of this old-established and leading firm will, we are sure, be evoked by the heavy losses the family of its founder has sustained during the past fourteen months by the deaths of members thereof. It was only on p. 257 of our issue of April 30 last that we recorded the death of Lieut.-Col. Sir Archibald Dwnay, the founder and managing director of the firm, eleven times Mayor of Wandsworth, who was bereaved of his eldest son, the late Dr. O. Dwnay, in November, 1918. It has not been given to his two sons to

Note built-in wardrobes and cupboards which mean that only one surface needs cleaning instead of three or even four



FIRST FLOOR PLAN

First Prize. See how the windows, by opening inwards instead of outwards can be cleaned inside and out without ladders.

meals. The sliding table top usually seen is omitted, on account of its liability to accumulate dirt in the slides, and a movable cooking table is suggested in its place.

The larder is fitted with removable glass shelves and a built-in food safe which is water-jacketed. Through this the whole of the cold water supply to the house circulates—quite the best scheme yet devised for a country where ice is so little used for keeping food fresh and cool. In the store, which is fitted to take dry goods and preserved food, the shelves are adjustable and made of enamelled steel.

The only coal used in the house is for one anthracite furnace, which heats the whole house and provides hot water. It is planned to put it on the back lobby, close to the coal store, so that there need be no running up and down cellar stairways to feed the furnace or to carry coals. The furnace may be used as a destructor for all house refuse also.

Radiators appear in recesses in all the rooms, but the radiators in this house are not traps for dirt, because they are hung on hinges in such a way that they may be swung out from the walls so that a person may get behind them with broom and brush.

Hammer-smith Profiteering Committee decided last week that furniture bought on the hire system comes under the Profiteering Act.

Mr. George Ross, burgh surveyor and sanitary inspector of Clydebank, died on the 17th ult., at the age of sixty-five. He was appointed master of works in 1897, and subsequently burgh surveyor.

Mrs. J. A. Gotch, F.R.I.B.A., presented the prizes at the annual speech day at the Kettering School, when regret was expressed at the impending departure of Miss Bristol, B.A., the headmistress, who is leaving for Loughborough in the new year.

nection with the National Eisteddfod of Wales, his large painting, "Yuletide Festival," depicting the old baronial custom of bringing in the boar's head, gained the highest award, a gold medal and £30; and he also received two other gold medals, one for a study from life, and the other for two water-colour drawings, "A Price on His Head" and "His Latest Possession." Further successes resulted in his election as an Associate, and later on as a member of the Birmingham Royal Society of Artists. He was also elected to the Royal Society of British Artists, where one of his most important water-colours, "The Love Philtre," was exhibited. In 1897 he was elected a member of the Royal Institute of Painters in Water-colours, and he was also a leading member of the Birmingham Art Circle and the Easel Club. For a number of years he devoted much of his time to the production of larger decorative panels both in oil on canvas and in fresco, with considerable success. A large fresco, the subject of which was taken from William Morris's "Dream of John Ball," reproduced in the special number of the *Studio* in 1901, was done for a house in Sutton Coldfield; and an important decoration in coloured plaster-work in low relief, representing a hawking party in Anglo-Saxon times, was placed in Glyn Court, Handsworth. His pictures were almost always "costume" pictures, and he used with telling effect the quaint and gorgeous dresses of mediæval and Georgian times. His larger compositions were well arranged, and as integral parts of a decorative scheme were in complete harmony with their surroundings. His colour, too, was good, and his technical ability and the freedom of his brushwork were of a high order. One of his latest works was an altar piece for St. Stephen's Church, Birmingham. On account of ill-health Mr. Davis had resided for some years past at Torquay.

attain the ripe old age of Sir Archibald, but the friends of both will long cherish memories of considerate kindness and eminent ability in their respective vocations which had won for both the cordial regard and esteem of all with whom they came in contact.

HEALTH MINISTRY'S HOUSING REPORT.

New schemes submitted to the Ministry during the week ended December 20 numbered 138. The total number of schemes submitted by local authorities and public utility societies is now 7,748, comprising about 57,250 acres. The schemes approved now number 3,165, comprising about 29,550 acres.

Fifty-eight lay-out schemes were submitted and sixty approved during the week, making the total number of lay-outs submitted 1,909, and the numbers approved 1,265.

House plans representing 3,511 houses were submitted during the week, and plans for 3,377 houses approved. The total number of houses represented in the plans submitted is 78,818, and in the plans approved 63,362. Tenders for 20,513 houses have been submitted, and approval given to tenders for 16,940.

Details of local authorities' schemes dealt with during the week are as follows:—

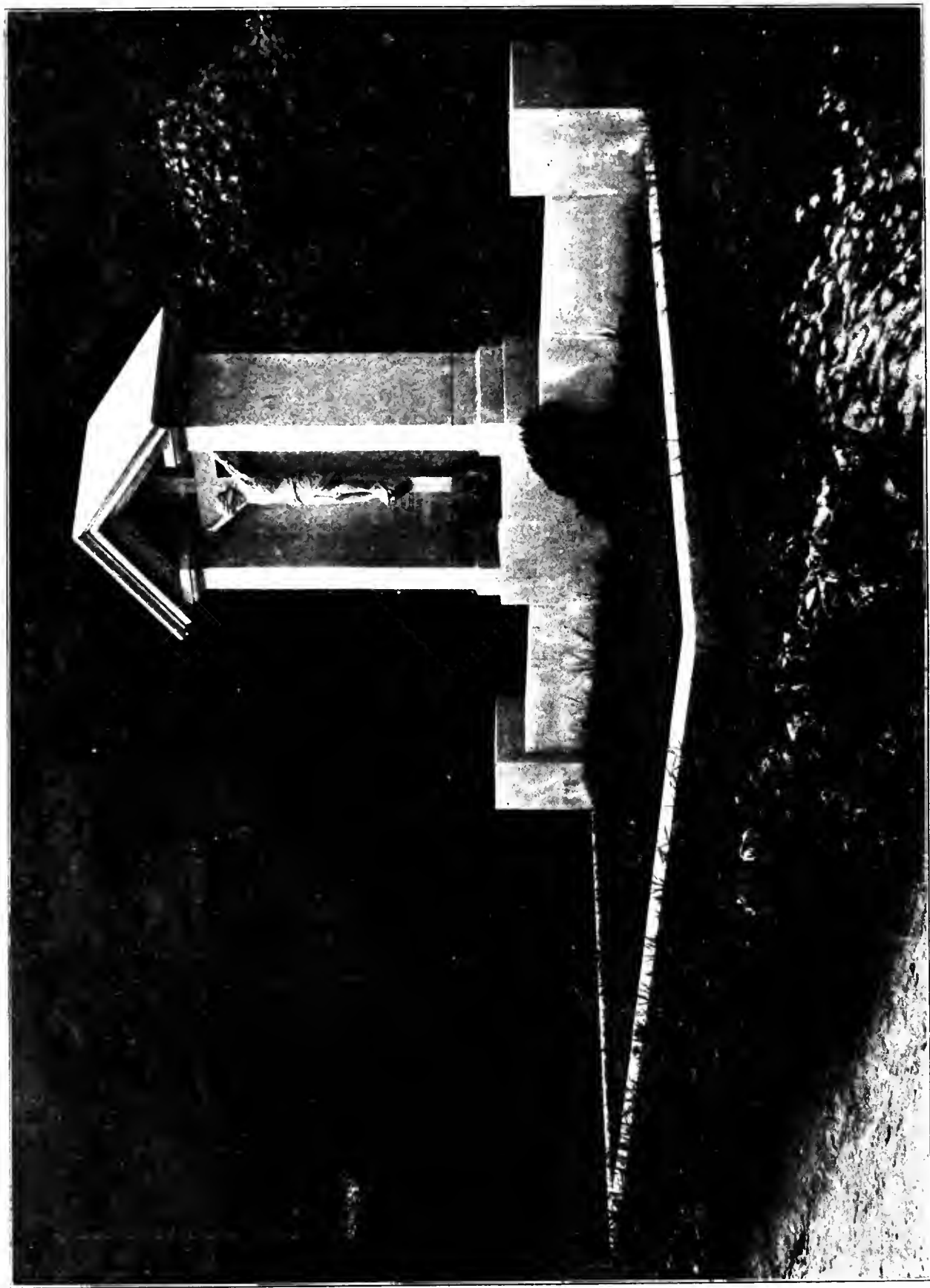
BUILDING SITES.

Schemes Submitted.—The number received from 58 local authorities was 136, comprising 571 acres, and bringing the total number of schemes promoted by local authorities to 7,658, covering approximately 54,850 acres.

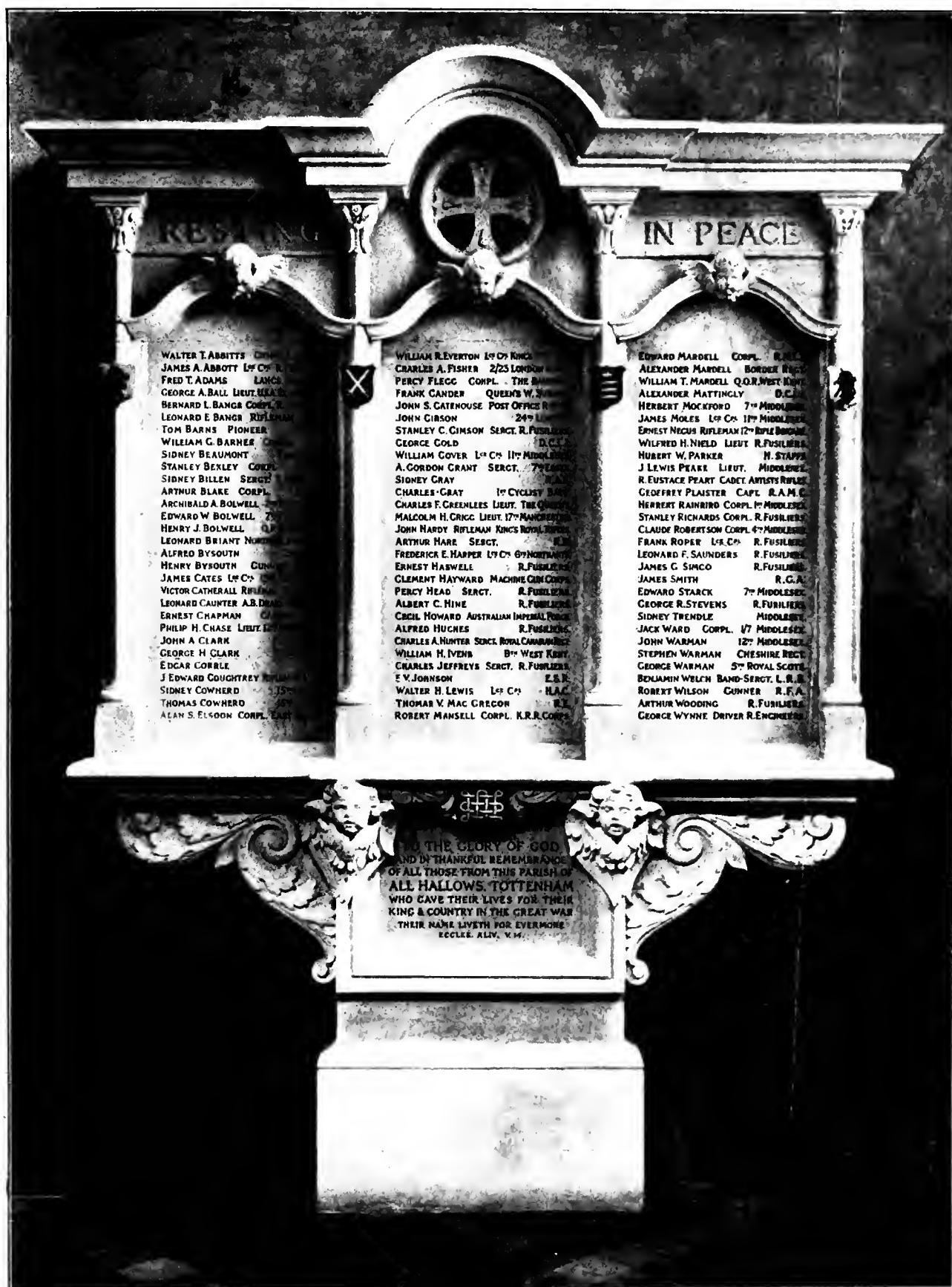
As a memorial to the late Canon W. Wanstall, the first vicar, it is proposed to place an oak panelling in the west end of the nave of All Saints' Church, Lincoln, and, if funds permit, a niche over the font.



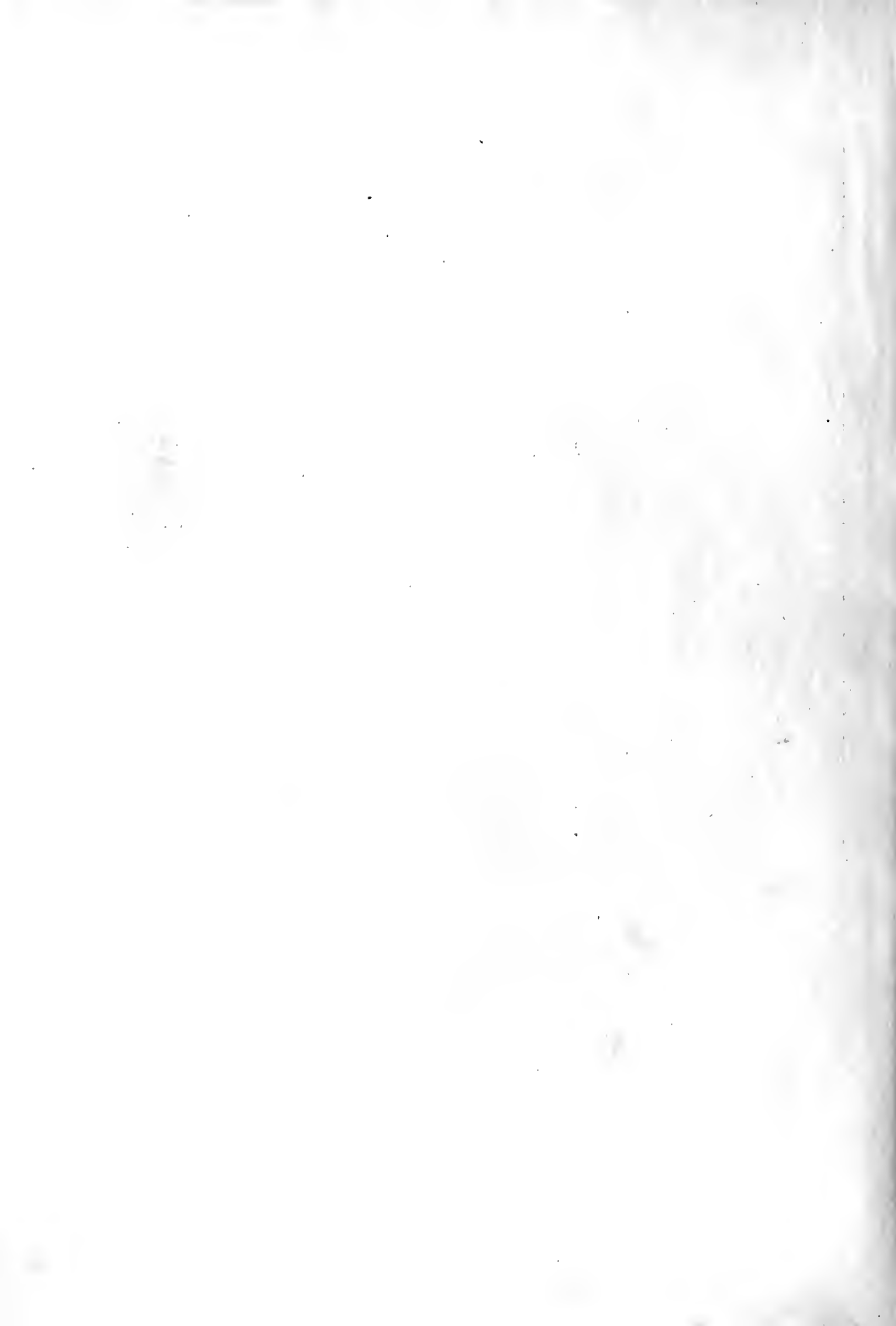
"THE LIGHT OF THE WORLD": STAINED-GLASS STUDY.
Designed and Drawn by the late H. W. LONSDALE.



WAR MEMORIAL, SEAFORD, SUSSEX.
Messrs. Sir Ernest George, R.A., and A. B. Yeates, F.F.R.I.B.A., Architects.



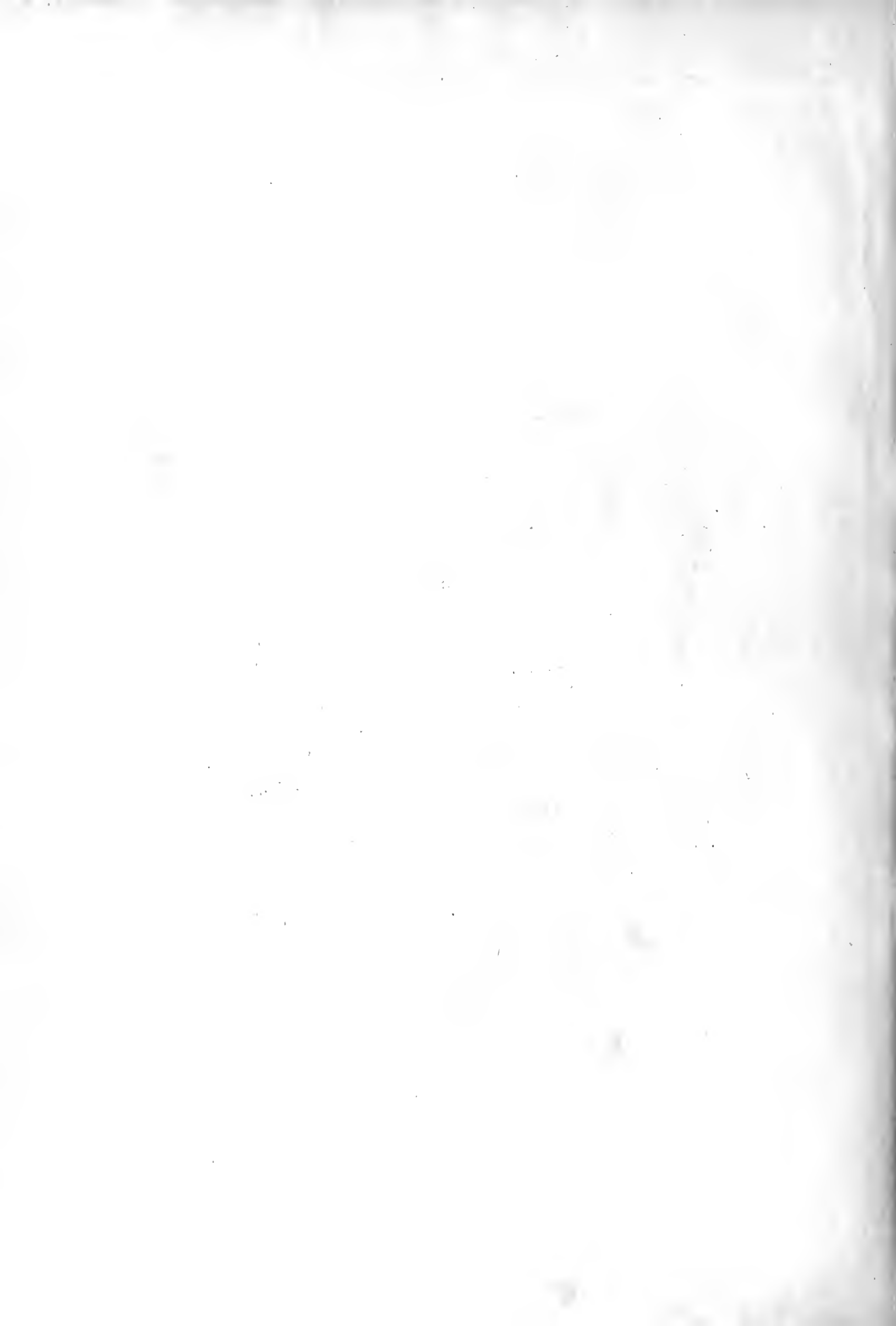
WAR MEMORIAL ROLL OF HONOUR, ALL HALLOWS, TOTTENHAM, N.
Mr. MAURICE B. ADAMS, F.R.I.B.A., Architect. 1916.



THE BUILDING NEWS, JANUARY 2, 1920.



PROPOSED WAR MEMORIAL: THE ARCHITECTURAL ASSOCIATION LIBRARY.

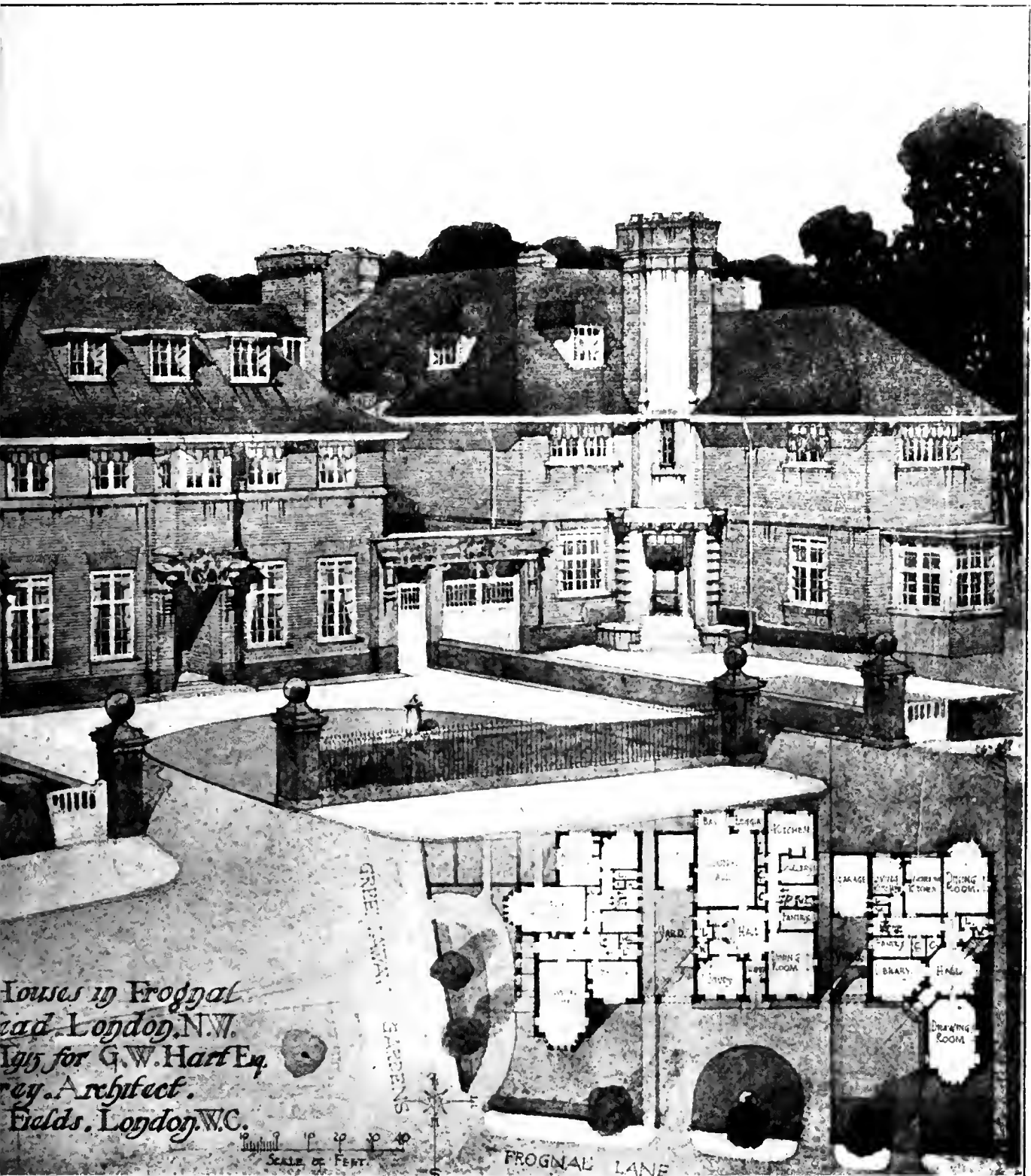


15-18.



GROUP OF HOUSES, FROGMAL LANE, F.
MR. CYRIL A. FAR

JANUARY 2, 1920.



TEAD, ERECTED BY MR. G. W. HART.
R.I.B.A., Architect.



Our Illustrations.

THREE HOUSES IN FROGNAL LANE, HAMPSSTEAD, N.W.

These houses occupy a well-wooded site in the best part of Hampstead. The house at the western extremity faces Greenaway Gardens and Frognal Lane. The dining-room is 23 ft. by 15 ft. The drawing-room is rather larger. The library measures 16 ft. by 12 ft. The hall is wide, and the staircase is obscured from the entrance. There are seven bedrooms, dressing-room, and two bathrooms. The garage is situated at the north end of the garden. The purchase price was £3,200, with a ground rental of £50. The centre house contains some adaptable facilities, such as either a large drawing-room or a billiard-room, and general lounge. The dining-room is 21 ft. by 15 ft., and has direct service. There are seven bedrooms, dressing-room, and two bathrooms. The purchase price was £3,300, with £42 ground rental. The house occupying the eastern end is entered under the main chimney stack. The lobby opens into an octagonal hall, 15 ft. diameter, with staircase on main axis. The drawing-room is 26 ft. by 15 ft., and the library 18 ft. by 12 ft. The dining-room is 22 ft. by 15 ft., with an entrance to the garden. There are eight bedrooms, a dressing-room, two bathrooms, and a garage. The purchase price was £2,975, with a ground rental of £38. The drawing reproduced was shown at the Royal Academy this year. Mr. Cyril A. Farey, A.R.I.B.A., of Salisbury, was the architect.

WAR MEMORIAL, SEAFORD, SUSSEX.

This photograph was shown at the Royal Academy War Memorials Exhibition lately. The architects are Messrs. Sir Ernest George, R.A., and A. B. Yeates, F.R.I.B.A. The monument is erected in Seaford Cemetery, and is a family memorial, and incidentally commemorates the loss of a son in the war. The figure was executed by Mr. W. S. Frith.

WAR MEMORIAL, ALL HALLOWS CHURCH, TOTTENHAM.

This Roll of Honour has been recently erected in the south aisle of the mother Parish Church of All Hallows, Bruce Grove, Tottenham. The work is carried out in Portland stone, with a green marble spandril filling to the gilt cross in the pediment. The heraldic shields are emblazoned, showing the arms of the Diocese of London and County of Middlesex, the Lion and the Unicorn coming right and left. The emblem of All Hallows is in the centre, over the dedication panel. The names of the fallen are incised and filled in flush with mastic cement. The architect was Mr. Maurice B. Adams, F.R.I.B.A.

ARCHITECTURAL LIBRARY AT 34 AND 35, BEDFORD SQUARE: PROPOSED A.A. WAR MEMORIAL.

The President, Mr. Maurice E. Webb, has issued this appeal in the "A.A. Journal":—"Before issuing an appeal for funds to erect a memorial to those members of the Association who fell in the war, the Council are anxious to have an expression of opinion from individual members as to the form it should take. Some of those who fell had passed through the school, some had only begun their course when they volunteered, some were members of the A.A. before the school in its present form was started, and others joined after commencing practice. It is felt, therefore, that the memorial should be placed

in some part of our premises which is used both by members and students, and that, if possible, it should take a form which will help to carry on the traditions of the Association which so many of these men were they alive to-day, would testify had done much to mould their architectural outlook and sympathies, and which we know they would wish to see continued. The Council propose, if members agree, to raise a fund—First, for a simple tablet to carry the names of those who fell in the war; second, to provide a really good modern architectural library for the use of all members and students; third, special cases to house the books in. This library to be called the Memorial Library, and to be placed in the first floor reading room of our new premises. Each book to be permanently marked with a suitable book-plate, and if given in memory of any individual member, to have his name inscribed upon it. Mr. Robert Atkinson has been asked to design the cases and tablet. His first sketch is reproduced in this number to indicate the general design. They will be movable, as our premises are leasehold. If this proposal is generally approved every member of the A.A. will be invited to assist in raising the necessary funds, and at the next general meeting, after the issue of this number of the journal, a committee will be elected to carry the project through."

"THE LIGHT OF THE WORLD": A STUDY FOR STAINED GLASS.

Among the autograph drawings of "draperies" found in the folios belonging to the late H. W. Lonsdale were two designs, of similar size, of Christ, intended for stained glass windows. We gave the first of this pair in our issue of November 21, under the title of "The Good Shepherd." To-day our reproduction is of the second figure, "The Light of the World." We began our series of Mr. Lonsdale's studies on October 31, followed by others of November 7 and 14.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.

The fourth general meeting of the session was held at the Association's Rooms, Royal Society of Artists' Buildings, New Street, Birmingham, on Friday, December 19. The President (Mr. H. T. Buckland, F.R.I.B.A.), occupied the chair, and twenty-five members were present, when Mr. Harold H. Hughes, A.R.I.B.A., delivered a lecture entitled "The Local Building Traditions and Materials of Snowdonia."

The lecturer pointed out that the climatic conditions in the mountainous portions of Wales had a very great effect on the design of buildings and the choice of materials. The storms that take place in this bleak, wild quarter of our islands are very severe, and unless one has actually experienced them it is difficult to give a graphic description of their tremendous powers of penetration. Those who visit the district in summer, like those who climb only in sunny and dry weather, know nothing of the real glory of the hills. "Who sees them only in their summer hour sees but their beauties half, and knows not half their power."

In view of the physical features of this region and the character of the elements, the low-lying ground was chosen by the Romans for the erection of dwellings, the larger buildings and most of the fortifications being erected on the higher ground.

The earliest form of dwelling, and one which was certainly in existence at the time of the Roman occupation of the country, was a kind of circular hut, although the circular plan was not invariably adopted, however, but often varied to an oval or pear shape. These dwellings were of a very rough type, and were neither provided with light nor ventilation; the smoke from any interior fire escaped by means of the doorway. The

diameter varied from 10 to 20 ft., and sometimes it was even larger.

As time went on a house, rectangular on plan, was introduced, but very little improvement was made as regards comfort or domestic arrangements. It consisted of one room, with an angle and fireplace on one of the end or shorter walls, and invariably had its doorway on one of the side or longer walls. The walls were very low, and the roof often sloped up at a pitch of 100 deg., and was nearly always thatched. The roof trusses were formed of oak, and were invariably in one large curved piece. The floors were formed of beaten clay; some examples of this type of floor exist in Wales to-day. After much wear these floors lend themselves to a polish, and in more than one instance they have been black-leaded.

The early churches were simple rectangular buildings, and oak and wattle were chiefly employed in their construction. The same plan was always adopted, no variation being recognised by the church builders of the period.

Descriptions of many of the types of buildings to which the lecturer referred are to be found in Allen Raine's "On the Wings of the Wind," "The Welsh Singer," etc., although in these books the buildings described are of a later period, and are not actually within the area known as Snowdonia. They do, however, convey a splendid idea of the traditional Welsh dwelling.

The rood screens in the Welsh churches have a character of their own, and are indeed beautiful in design. The screen at Conway, however, is essentially English, owing, of course, to the fact that it was designed and constructed after the advent of English influence in the country. It is without doubt the finest rood screen in Wales to-day.

Another very beautiful rood screen is to be found at Llanrwst. There is also at this place a very picturesque bridge, dated 1636, over the Conway, that is said to have been built by Inigo Jones.

It is very interesting to note how much more easily the building traditions can be traced in the smaller villages and hamlets.

Few Welsh towns or villages, except such places as Maentwrog or Ruthin, are pleasing objects in themselves, but they harmonise admirably with their environment, and seem to fit into the landscape much as a portion of a jig-saw puzzle.

In designing dwellings to suit these majestic surroundings the architect is faced with innumerable difficulties, the battle with the elements defying him to the very utmost. It seems the harder the stone with which he constructs his walls the less impervious are the buildings to wet. Some of the old walls were built 3 ft. 6 in. thick, with a 4½-in. brick wall on the inside, the aperture being filled with bran in an endeavour to keep the house dry, and, incredible as it may seem, the weather actually penetrated this.

When windows were first introduced they were most ineffectual, inasmuch as they did not perform the functions for which a window is expressly designed—i.e., light and ventilation. They were certainly windows in name, but little more. The glass used was of the thick green opaque variety, and they were made in either one or two lights (never three) lattice, and were not hung to open, but they were undoubtedly picturesque.

The evolution of the "step ladder" to the sleeping loft was from narrow stone stairs, which invariably started on the ground floor from a position adjacent to the angle or at the extreme gable end of the building.

Dormer windows were introduced at the end of the seventeenth century; hitherto the sleeping loft had not been too brilliantly lighted by the small windows in each gable.

In the eighteenth century the walls were built much higher—high enough, in fact, to permit of an upper story, with its ceiling level coincident with the eaves: at any rate, it was not nearly so close to the ridge as it had been in previous types.

Granite or slate rock, according to the district, seems to have been very plentiful, and much use was made of both materials. The slate was procured in large sizes, some blocks being as much as 7 ft. in length, and as it was desirable to have a wall which slopes out pretty considerably at its base, so that the moisture might be carried away from the

SWANPOOL GARDEN SUBURB, LINCOLN.—ELECTRICAL GENER- ATING PLANT AND HEAT DIS- TRIBUTION.

The origin of this garden city was in no small measure due to Col. J. S. Ruston, chairman of the board of directors for Messrs. Ruston and Hornsby and Mr. G. R. Sharpley, managing director of the same firm. In approaching the scheme it was felt that a serious effort should be made to make each house a real home in every sense without in any way sacrificing the artistic features that are so readily obtainable from a well laid out garden city.

In the past the enjoyment of home was spoilt through insufficient and uneven warming of the building, inadequate and uncertain hot water supply, unsatisfactory lighting, and in many instances extremely poor facilities were provided for the cooking of meals.

A central heating apparatus renders our homes more agreeable, cosy, and comfortable. The even distribution of the heat in all parts of the rooms is much appreciated. Proximity to windows will not produce discomfort, as previously felt; and it will not be necessary to crowd round the fireplace in order to be comfortable, whilst the entire absence of draughts is a decided gain. There is a genial warm temperature throughout the house, so that any room may be occupied with comfort and pleasure. The provision of an adequate supply of hot water for baths, so that hot baths may be had at any time of the day or night is also a much-needed adjunct to the house.

By using an accelerated service the pipes supplying the radiators are small, and may be placed in practically any position, regardless of levels, thus reducing to a minimum the cutting away and injury to decorations, etc. The radiators are arranged as unobtrusively as possible in the best positions for the even heating of the rooms.

In these days there must be no waste: especially is this so with fuel. A single source of heat, such as a power-station, where the boiler plant is designed to make the greatest possible use of the heat from the combustion of fuel before the gases make their exit through the chimney, must obviously be far more economical than a number of grate fires in each house.

The provision of a supply of hot water from a boiler in the kitchen range is wasteful, inconvenient and uncertain. The range is not always in use when hot water is required, such as early in the morning.

Let us now turn our eyes on the provision of lighting and cooking apparatus. By the adoption of electric lighting, match scarcities will, for one thing, be entirely eliminated, and from a health point of view this mode of lighting stands above all other means, without in any way sacrificing brilliancy or artistic appearance.

For cooking, however, the use of electricity has been the subject for much serious thought, but, after weighing all the points most carefully, it was finally adopted. There is no question that cooking can be carried out most satisfactorily by this means; the real trouble in the past has been the cost of the current used.

By combining the services in a district heating scheme, whereby the steam that has passed through the turbines of the electric generator sets, is used for heating the water required for warming and supplying the houses with hot water, a substantial decrease in the rate chargeable for electrical energy is possible.

The scheme, therefore, for providing

the 3,000 houses which it is proposed to build during the next three years on this estate, was, after consideration of all the above facts, with electric light, electric cooking, hot-water radiators for warming, and hot water supply for all domestic purposes, entrusted to Messrs G. N. Haden and Sons, Limited, engineers, in conjunction with Messrs. Thompson, Hennel and James, architects. Col. J. S. Ruston, as previously mentioned, together with Mr. G. R. Sharpley, managing director of the same firm, and the technical staff of Messrs. Ruston and Hornsby, have taken an interest in all the details, both theoretical, practical, and financial, and they are convinced that this scheme is a sound proposition.

The housing estate is outside the city boundaries, and at the present moment the local electricity generating station is so taxed that it could not supply the necessary current for such an additional number of houses.

The combined installation has been so designed that the electrical energy can be supplied at less than a penny a unit for both lighting and cooking purposes, but this has only been obtained by utilising the heat that in other plants is turned into the river or dissipated in a cooling tower, for heating water for domestic purposes, and the circulating water required for heating the houses by means of radiators, etc. For a basis for such circulation, a section of the Housing Committee, formed of working men and women, determined a figure representing the average cost per week, per house, for coal required for heating, cooking, etc., under the existing conditions, plus cost of gas for lighting, etc., and it is estimated that this figure would cover the cost of fuel, establishment charges, interest on capital, and depreciation, etc., for the plant as designed.

The question of dealing with the exhaust steam during the summer months, when the heat is only required for the domestic service, has been given most careful thought, and a scheme is now under consideration wherein the whole of the surplus steam can be put to a profitable use. The plant under these circumstances will be working under the most economical conditions at all times throughout the year. During the heating season the exhaust steam from the turbines will be condensed in heater calorifiers adjacent to the engines, and the water thus heated will be pumped through circulating mains, and distributed to each and every house, to the public buildings, such as schools, institutes, etc., as well as the public laundry and swimming baths. By this means a high thermal efficiency will be obtained at the station, as every care has been taken to eliminate all possible sources of waste. During the summer months the heating system in each house will be shut off leaving the hot water supply available for use. The electrical energy generated at the station is bound to be cheap when produced under these most favourable conditions, and will be supplied to each house for lighting and cooking. We are sure this garden suburb as outlined for Swanpool will mark a new era in the construction of garden cities that will readily open up a bright and comfortable future for the working classes of our glorious native land, and help to kill that spirit of unrest which is doing so much to undermine our supremacy at the present time as the leader of the nations.

Sir A. Waterlow, R.A., of South Hampstead, a former president of the Royal Society of Painters in Water Colours, left £120,981.

THE SOCIETY OF ARCHITECTS' LUNCHEON TO LORD AND LADY ASTOR.

The Society of Architects has been fortunately favoured of late by the response to its invitations to some of the leading exponents of the opportunities and difficulties at present engaging the attention of all rational men and women, and by none more so than the members of our own calling and the many industries subsidiary thereto, and yesterday's luncheon at the Trocadero Restaurant was in many respects the most successful and enjoyable of the functions organised.

The chair was occupied by the president, Mr. E. J. Sadgrove, who was supported by representatives of kindred societies, Government departments and other public bodies.

The gathering was of supreme interest, and afforded an opportunity of bringing to the notice of the representatives of the Ministry of Health the views of the Society on the housing question, and of the position of architects in relation thereto.

The President of the Society, Mr. E. J. Sadgrove, in proposing the toast of "Our Guests," extended a hearty welcome to all, and in particular to the Parliamentary Secretary to the Ministry of Health, the Rt. Hon. Viscount Astor. To the Society's great regret Lady Astor, M.P., had found it impossible to be present, but he felt sure that the object in which they were all interested, directly or indirectly, viz., the National Housing Problem, was one in which Her Ladyship took the greatest interest.

Viscount Astor and the Society of Architects were not strangers to each other, because some time ago he was good enough to receive on behalf of the Ministry of Health a deputation from the Society on certain aspects of the Housing question, and on that occasion the views expressed by the Society were such as to ensure His Lordship's sympathetic consideration.

Sir Charles Ruthen briefly, but pertinently, supported the toast, laying stress on the necessity of closer co-operation between architects and those concerned with the direction of the national effort to accomplish the housing of the people.

Lord Astor said we not only want to build houses, but satisfactory houses. It was absolutely necessary there should be some measure of Government control. We had to clear away the slums, or the slums would frustrate the efforts of to-day. Our minimum of houses must not be half-a-million, but 800,000 houses. It was absolutely necessary that enough labour should be available to build these. We must have more labour, and it was not to the national interest to divert labour from houses to unnecessary buildings. Every child born into the world called to us to hasten our solution of the problem. The real problem was the rebuilding of England. We had also to stop the huge accretions of population in our great cities. The task before us was the building of new villages and new cities. Taste was a thing not to be defined by Act of Parliament. We had to stimulate invention, and, if possible, to find new material and new savers of labour. Rapidity of construction depended in some measure on standardisation. Lord Astor concluded by expressing his gratification at the assistance rendered by architects to the Ministry of Health. The Ministry did not mind criticism, provided architects assisted it to get ahead. We wanted to help Nature and not to desecrate Nature. He had every confidence that architects would rise to the occasion.

Mr. Walter Cave, V.P.R.I.B.A., supported the toast.

The toast of the Society of Architects was proposed by Mr. James Carmichael, and responded to by Mr. Stennett, of the National Federation of Building Trades Operatives.

The Bethnal Green Borough Council have appointed Mr. Albert R. Allen-Lodge, A.R.I.B.A., M.S.A., F.S.I., at present temporary architectural and general assistant, to the position of assistant borough engineer and surveyor at a salary of £300 per annum, plus war bonus.

Our Illustrations.

WAR MEMORIAL, SPALDING.

We give a pair of views to-day, and at an early date will reproduce the plan of this work, which was shown at the recent War Memorials Exhibition held in the galleries of the Royal Academy by these two clever water-colours by Mr. Harry Waring. Sir Edwin L. Lutyens, A.R.A., the architect of this work, being absent in India, engaged on his great plans at Delhi we have not been able to obtain any further particulars of this scheme. It embodies an open cloister, built of ashlar masonry and roofed with red pantiles. This building encloses a courtyard enshrining the great war stone, and in front, beyond a green sward garth, the memorial cross is set in the middle of a circular lily pond, with four square-cut yews on the diagonal line and yew hedges continuing as aisles to the right and left. Four conical yews also stand as sentinels round about the great war stone, as seen in the double-page illustration.

MEMORIAL TAPESTRIES, ETON CHAPEL, WINDSOR.

The Morris tapestries, of which the reredos or central one is here illustrated, form the covering of the east end of Eton College Chapel, and were part of the memorial to Eton boys who fell in the South African war. The centre-piece, from Sir Edward Burne-Jones's "Adoration of the Magi," was an earlier gift to the chapel by Mr. H. E. Luxmoore, but the beautiful side pieces, of which we shall give photographs shortly, were specially designed for this memorial by Mr. Henry Dearle, head of the Morris Weaving Works at Merton Abbey. The figures of Angels ("Angeli Laudantes" and "Angeli Ministrantes") are taken from the Burne-Jones cartoons done for Salisbury Cathedral. One pair, without the shields and greenery setting, is in the collection at the Victoria and Albert Museum. Tapestry weaving was revived in England by William Morris in 1881. All three of these beautiful hangings were exhibited by the photographs at the War Memorial Exhibition of the Royal Academy, 1919.

MEMORIAL REREDOS, ROYAL NAVAL BARRACKS CHURCH, CHATHAM, KENT.

The figures represent in the centre Christ in Glory on rainbow, above the rising sun, emblematic of Japan; St. George to the left, representing Greater Britain; St. Denis, on the right, showing France. The top left-hand statuette on the frame is St. Andrew for Russia, below this St. Michael for Belgium, and the Annunciation in the pair of lower figures (one on either hand), Italy. The uppermost right-hand statuette is St. Saba for Serbia. St. Nicholas, in the centre on this side, being for Montenegro. On the retablo: St. George for England on the left, then St. Andrew for Scotland, St. Patrick for Ireland, and to the extreme right St. David for Wales. The shields on the doors of the tryptich represent the Colonies and Dependencies. Those on the cornice the European allied countries—Serbia, Italy, Russia, France, Belgium, Portugal and Roumania, and besides America. Those on the base, England, Scotland, Ireland, Wales, England and France. The scheme of this work was designed to illustrate the fighting Allies, including symbolic figures and heraldry of the united great Powers, as well as the British Dependencies. The photograph here reproduced was shown at the Royal Academy in the War Memorials Exhibi-

tion in the autumn of last year. Mr. W. D. Caröe, M.A. Cantab., F.S.A., F.R.I.B.A., is the architect, and the sculpture was carried out under his personal direction by Mr. Nathaniel Hitch.

STAINED-GLASS MEMORIAL WINDOW TO EDWARD STOTT, A.R.A., AMBERLEY CHURCH, SUSSEX.

This work was the result of a wish that Edward Stott expressed to the effect that Mr. Robert Anning Bell, A.R.A., should design a window to his memory. Accordingly Miss Dinnage, of Amberley, who was a devoted friend of the painter commemorated, commissioned Mr. Bell to realise his wishes. The window is of an unusual shape, owing to its site being really the top of a Norman doorway, which at some time or other had been built up and filled in with stone. The central panel is a pretty close adaptation of a picture by Edward Stott, representing the "Entombment," and which the painter particularly valued. The border is composed of young angels in adoration.

THE ESCORIAL PALACE, MADRID. PAVILION IN MAIN QUADRANGLE.

This gigantic palace is built of granite, and stands like a colossus on its mountain site, in bleak solitude, backed by peaks capped with snow, though it is reached through pleasant woodlands, northwards of Madrid. The main edifice was thirty-one years in building and is three-quarters of a mile round. Juan Bautista (or Giambattista, of Toledo) was the original architect, whose design was made and its execution commenced in 1563, but like Versailles this palace had two architects, the carrying out being actually done by his successor, Juan de Herrera, and finished in 1584. The Escorial is to Spain, and to its architectural history what Versailles is to France. Both are reckoned by Fergusson as the greatest and most deliberate efforts of the national will in this direction and rank as the best exponents of the taste of the time when they were built. The Spanish example is a century older than its Paris rival, and it is not possible to compare the two buildings because their purposes were so dissimilar. The French Palace was intended for a gay and brilliant court, and the Escorial was to be the splendid abode of a great but dismal despotism. The Chapel at Versailles is in a back yard, while the greatest feature of the Spaniards' conception is furnished by the enormous and grand church, with its vast cupola and twin western towers facing the barrack-like rectilinear atrium. Part of these towers show above the courtyard of the colleges figured by the drawing of the palace given to-day.

STATUES AND MEMORIALS.

KING'S LYNN.—The general committee appointed to carry out the erection of a suitable war memorial at King's Lynn met on Wednesday week. The various sites suggested in the town were inspected in company with an architect, and the Tower Garden was eventually decided upon. Messrs. Milne and Phipps, architects, of London, were authorised to prepare designs and estimates. Just over 500 names will have to appear on the memorial.

Messrs. MacAndrews and Forbes, Ltd., 2, Broad Street Place, London, E.C.2, have been awarded a diploma of excellence for their Fiberlic board, exhibited at the Housing and Health Exhibition inaugurated by the Corporation of Glasgow.

Mr. J. McE. Bowman, the American hotel proprietor, who desires to turn the Devonshire House site into a huge hotel, has made an offer for it which he hopes will be accepted. If he gets the site he proposes to build a model hotel of 1,000 rooms at a cost of about £1,000,000.

KELSO ABBEY.

An agreement has been entered into between the Duke of Roxburghe, K.T., and the Commissioners of his Majesty's Works and Public Buildings for the guardianship of the ruins of Kelso Abbey, as a result of which the fabric of the Abbey will be maintained in future by the State, and treated as a national monument.

HISTORY OF THE ABBEY.

Kelso Abbey, dedicated to the Virgin and St. John the Evangelist, was founded in 1128 by David I. for monks from Tiron, in Picardy, whom he transferred to Kelso from Selkirk, where they had been installed fifteen years before. The building was completed towards the middle of the thirteenth century, and it became one of the richest and most powerful establishments in Scotland, claiming precedence over the other monasteries, and disputing for a time supremacy with St. Andrews. In 1160 John, a canon of the monastery, was elected Abbot, and, arriving in 1165 mitred from Rome, held the Abbacy till his death in 1178 or 1180. Osbert, who succeeded him, was in repute for his eloquence, and was despatched at the head of several influential ecclesiastics and other parties to negotiate with the Pope in a quarrel between him and William the Lion. He succeeded in obtaining the removal of the excommunication which had been laid on the kingdom, and in procuring for the King expressions of papal favour.

RIVALRY IN ST. ANDREWS.

Having seized all ecclesiastical property in Scotland, Edward I. of England received in 1296 the submission of the Abbot of Kelso and gave him letters ordering full restitution. By a treaty between Robert Bruce and Edward III., Kelso Abbey shared, in 1328, mutual restitutions with the English monasteries of property which had changed owners during the international wars. In 1420 the Abbots, having their right of superiority over all the other Abbots of Scotland, which they had hitherto uniformly possessed, now contested by the Abbots of St. Andrews, and brought to a formal adjudication before the King, were compelled to resign it, on the ground of the Abbey of St. Andrews being the first established in the kingdom.

The Abbey suffered damage in numerous English forays. On the night after the battle of Flodden an emissary of the Lord of Hume expelled the Abbot and took possession of the building. The Abbey was pillaged in 1522 by the fourth Earl of Shrewsbury, the vaults and the chapel or church of St. Mary being demolished, the cells and dormitories fired, and other parts of the edifice unroofed. Other inroads of the English preventing immediate repair or re-edification, the Abbey, for a time, crumbled toward total decay, and the monks reduced, it is recorded, to comparative poverty, skulked among the neighbouring villages. From 1537 till his death in 1558 James Stuart, the illegitimate son of James V., nominally filled the office of Abbot, and was the last who bore the title. In 1542, under the Duke of Norfolk, and again in 1545, under the Earl of Hertford, the English renewed their spoliation of the Abbey, and almost destroyed it by fire. On the latter occasion it was resolutely defended by about 300 men who had posted themselves in its interior, and was entered only after the corpses of a large proportion of them formed a rampart before its gates.

In 1560 the monks were expelled in consequence of the Reformation, and both then and in 1580 the Abbey was despoiled of many of its architectural decorations, and carried far down the decline of ruin. Its enormous possessions becoming the property of the Crown were in 1594 distributed among the King's favourites.

Though built under the same auspices, and nearly about the same period, as the Abbeys of Melrose and Jedburgh, Kelso totally differs from them in form and character, being in the shape of a Greek cross. The architecture is described in Haig's "Account of the Town of Kelso" (Edinburgh, 1825) as "Saxon or Early Norman, with the exception of four magnificent central arches, which are decidedly Gothic." It is not certain when the Abbey was first used as a parish church after

the Reformation, but records show that it was repaired for the purpose in 1643. About the middle of the eighteenth century public worship was discontinued in the building on account of its dangerous state. The ruins were for a time greatly disfigured by several modern additions; but of these part were removed by order of William, Duke of Roxburghe, in 1805, and the remainder were taken down by Duke James in 1816, by which the ruins were restored to their original simplicity. By the removal of these excrescences the noble transept, together with several windows and side arches, were then restored to view.

The cruciform church has an unusual ground plan, the west end of the cross forming the nave, and being shorter than the chancel. The nave and transepts extend only 23 ft. from the central tower. The remains include most of the tower, nearly the whole of the walls of the south transept, less than half of the west front, with a fragment of the richly-moulded and deeply-set doorway, the north and west sides of the north transept, and a remnant of the chancel. The chancel alone had aisles, while its main circular arches were surmounted by two tiers of triforium galleries. The predominant feature is the great central tower, which, as seen from a distance, suggests the keep of a Norman castle. It rested upon four Early Pointed arches, each 45 ft. high (of which the south and west yet exist), supported by piers of clustered columns. Over the Norman porch, in the north transept, is a small chamber, with an interlaced arcade surmounted by a network gable.

SUCCESSFUL BUILDING IN STUCCO.

In many sections of this country, says the *American Architect*, the housing problem is, to a large extent, being solved by the erection of large numbers of small houses, sold on such a financial basis that the man of moderate means may, in the course of a few years, acquire his own home.

The importance of such a movement and the need for encouraging and extending it may be accurately judged by the statement recently made by officials of the United States Steel Corporation that in practically no instance has a home owner gone on strike.

As successful reconstruction efforts in this country lie in maintaining increased production, and as strikes to a large extent frustrate such efforts, any action leading to the elimination of strikes is beneficial, not only to the country at large, but also to the potential striker as well. Therefore, it is well to lend our best efforts to the "own-your-own-home campaign."

But this is not all. These homes must not only be built, but they must be well and honestly built. Has any one practically considered the physiological effect on the country if, after thousands of the nation's populace have put their life savings into homes, they find the walls crumbling, the roof leaking, and other defects of construction manifesting themselves under the action of a few years' weathering? An inspection of the buildings being erected to-day awakens grave doubts as to their ability to wear well.

It is also evident to the most casual observer that the "stucco" type of house is largely in the majority. Probably in no other type of building is it possible to present an equally pleasing appearance, and at the same time cloak defects of construction which time will make evident.

While the use of stucco is ancient, and its adoption has continued in a moderate way through the ages, only in very recent years has it been applied extensively to small houses in the United States. The term stucco is used in a general, and often incorrect, way to designate any kind or type of plaster utilised for the external coating of buildings.

In treating of the stucco building it is meant specifically to refer to that type of building erected in this country whose walls are so constructed as to serve as a backing for the exterior stucco treatment, and not to that older and perhaps medieval type of building whose walls are of solid stone, and whose exteriors have been stucco covered.

Almost every kind of Portland cement, lime and gypsum have been used as the cementing

materials of plasters for exterior stucco work as well as other mixtures or combinations of materials.

In designing the stucco house there are certain fundamental principles which must be adhered to, or defects will eventually develop in the exterior plaster. Since many misconceptions exist as to the best methods of building in stucco, it is important that all of the available present day knowledge be applied in the design. Architects should include in their drawings correct details to guide the builder, and also completely describe the method of application in the specifications.

One feature of fundamental importance in successful stucco work is *properly designed foundations*, to insure against unequal wall settlement. The placing of footings on soft ground should be avoided as far as possible, but if no firm stratum can be reached at a moderate depth, the footings should be well spread out in order to avoid any appreciable settlement. This point cannot be too strongly emphasised since the best mixtures and the most expert work in the application of the stucco will not avoid its cracking, if the walls settle unevenly, due to improper foundations.

Next in order is a substantial background for the stucco. Here the matter of cost is largely responsible for the choice of wall construction. The commonest type of walls used in stucco buildings are (1) frame, (2) hollow tile, (3) concrete block, (4) brick, and (5) concrete. The variation of relative costs will, of course, depend on the locality of the building. If in close proximity to a lumber district, there will be an advantage in favour of frame construction, but if remote from any lumber producing territory and near brick or hollow tile plants, the latter materials would be cheaper. This matter must, in each case, be determined by controlling conditions.

Finally, it will be necessary to bear constantly in mind that stucco, after all, is only a comparatively thin coat of exterior plaster, and is not invulnerable to the elements if left altogether unprotected. Therefore, stucco merits whatever protection can legitimately be afforded. It should always be given more protection against leakage and drip than brick, stone, concrete, or even wood. Its use should be avoided on horizontal or nearly horizontal surfaces. Where it is applied on other than vertical surfaces, the pitch should be made as steep as possible in order to procure maximum results.

PROFESSIONAL AND TRADE SOCIETIES.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.—The fifth general meeting of the session was held at the Association Rooms, Royal Society of Artists' Buildings, New Street, Birmingham, on Friday, January 2. The president, Mr. H. T. Buckland, F.R.I.B.A., was in the chair, and forty-six members were present. The meeting took the form of an interesting discussion on "Continuation Schools," the principal speaker being Dr. Innes, chief education officer of Birmingham, who pointed out how essential it was that the necessity for the advancement of educational facilities in this country should be realised. Other speakers included Mr. E. C. Bowlay, F.R.I.B.A., Mr. J. A. Harper, Mr. A. Harrison, F.R.I.B.A., Mr. E. Wood, and Mr. A. L. Snow, A.R.I.B.A. A hearty vote of thanks was accorded to Dr. Innes.

Several suggestions have reached the Mayor of Wolverhampton (Mr. T. A. Henn) regarding the proposed war memorial for the town, and the general consensus of opinion is that a public hall suitable for concerts and meetings should be erected. A suggestions committee has been appointed to consider the proposals.

The late Mr. A. Scott, architect, of 1, Victoria Terrace, Radgar, left £5,879, and appointed Mr. T. J. Byrne and Mr. R. M. Butler executors and trustees, bequeathing them £20 each. He gave all the furniture in his office and all the maps, plans, and other architectural documents, etc., to his son, Anthony, and his son-in-law, Mr. T. J. Byrne, to be used by them jointly in carrying on his business of architect.

Our Office Table.

The Bishop of Chelmsford, writing to Essex incumbents' and churchwardens reminding them to apply for a Faculty before placing war memorials in churches, says:—"Sometimes people thought it unnecessary to apply for Faculties. In going about Essex as he did, sometimes he got very angry to find that incumbents and churchwardens had absolutely no knowledge at all with regard to architecture. Somebody had come along who had wanted a war memorial erected in the church. Something had been taken away which it was absolutely impossible to replace, and something was put up in its place which had spoiled the architecture of the church. That had been done over and over again, and it was to prevent it that Faculties should be applied for. Incumbents and churchwardens were only the trustees of the church building, and they had no right to alter anything at their own sweet will that possibly somebody in a thousand years' time would not like."

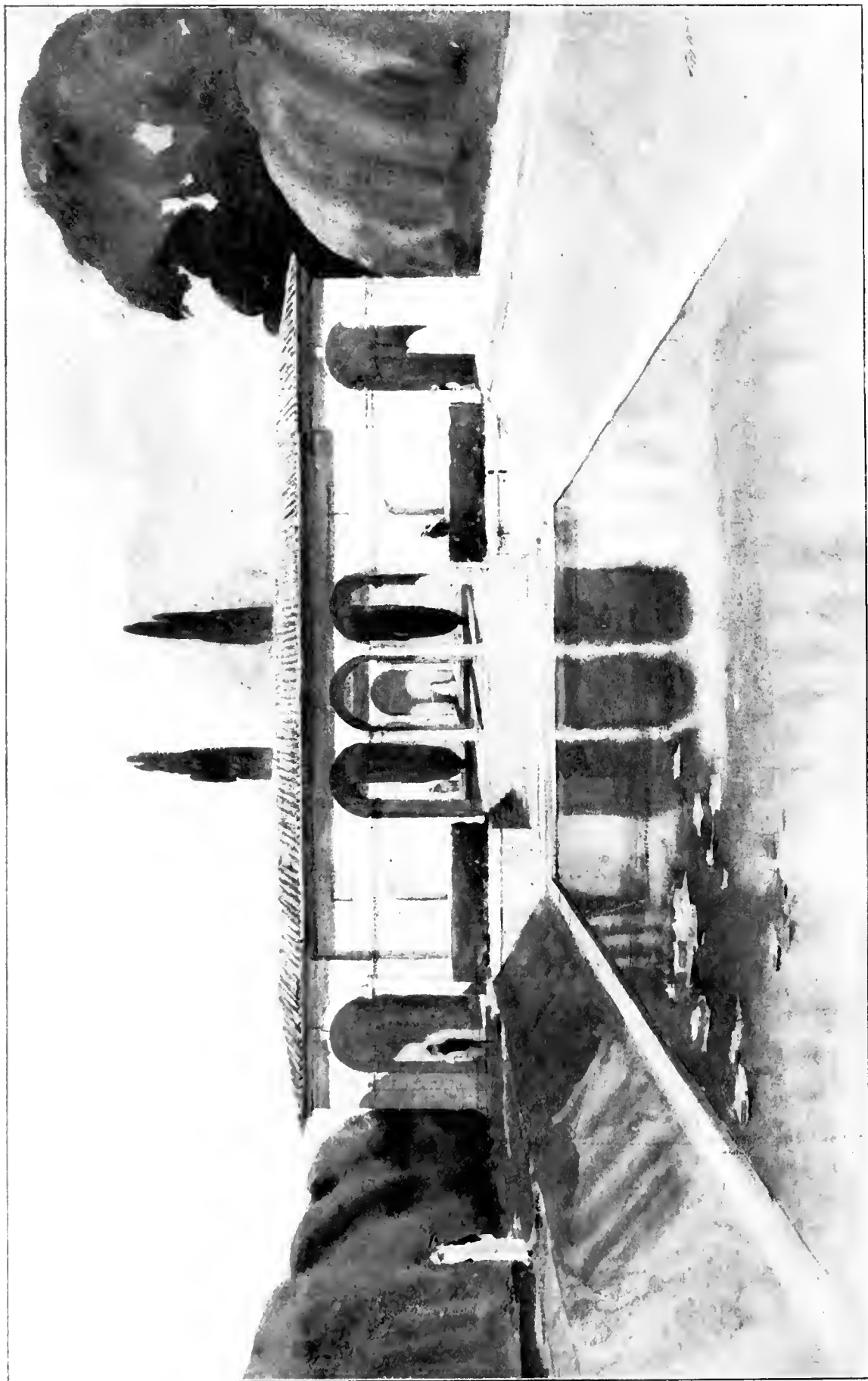
At the annual conference of the Scottish Labour Housing Association in Glasgow last Friday, Bailie Wheatley, who presided, said that over 4,000 families were on the corporation's waiting list for houses yet to be built. More garages than houses, he said, had been erected in Glasgow and Edinburgh during the past year. Resolutions were adopted as follows:—That Scottish public authorities be asked to establish a Scottish National Bank to finance housing schemes; that land should be acquired for housing on payment of the rateable value; that public authorities should establish works for manufacturing building material; that profiteering in land, building material, or money be made a criminal offence.

Building Intelligence.

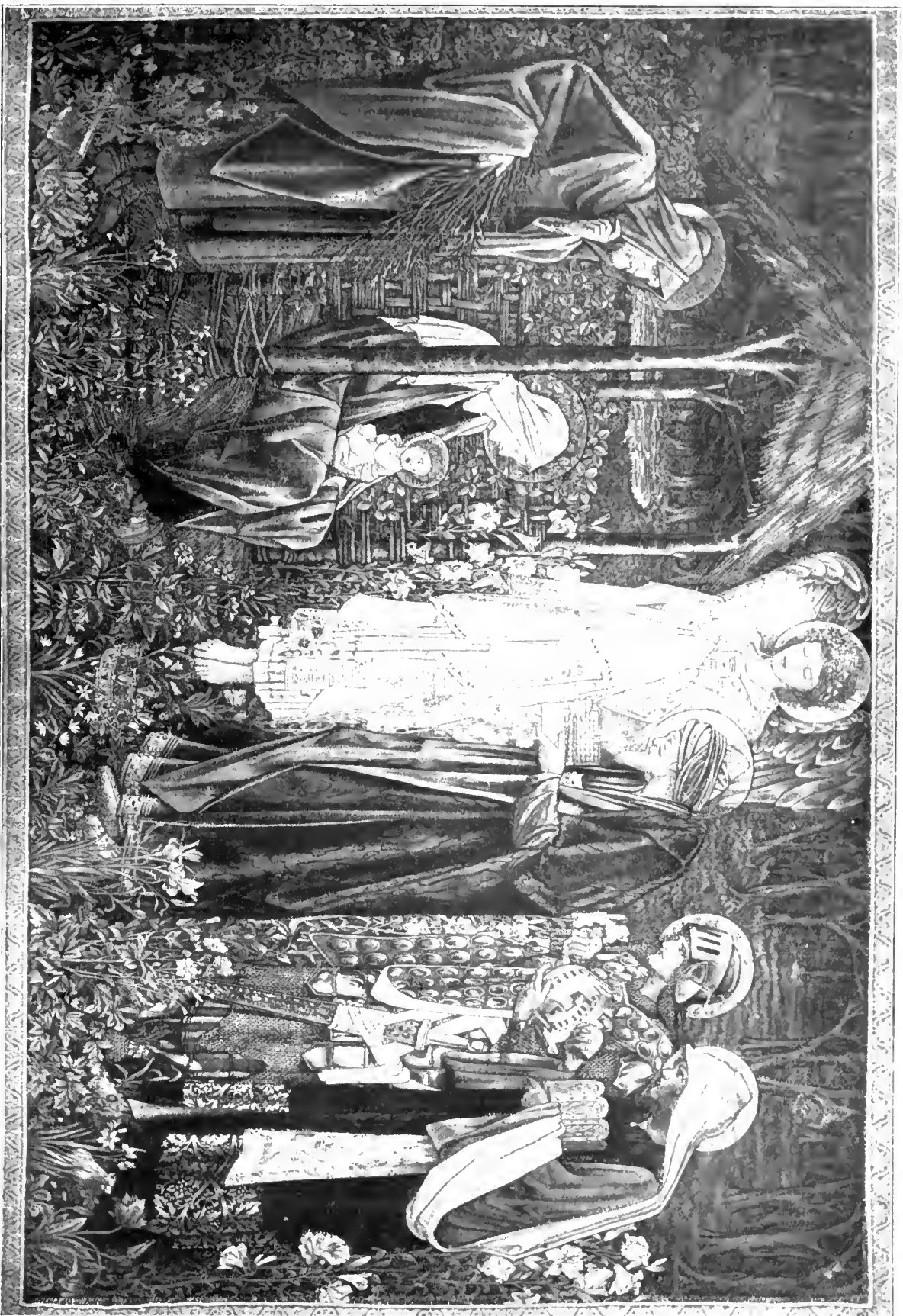
DWELLINGS FOR FOLKESTONE FISHERMEN.—Lady Rocksavage last Saturday week laid the foundation stone of the housing scheme which her brother, Sir Philip Sassoon, M.P. for Hythe, has inaugurated for the fishing community at Folkestone. Sir Philip Sassoon formed a public utility society, and found all the required capital to get the Government grant. Two acres of land were bought at a cost of about £700 an acre, and although building began only about a month ago, it is hoped that some of the houses will be ready for occupation by the end of February. The houses are to be built of brick cavity walling, which, owing to the exposed nature of the site, is coated with waterproofed roughcast. The roofs are boarded, felted, and covered with local tiles. The ground floor is of concrete and the upper floor of wood. There is a hot water system for the bath and sink, the water being heated by either the copper or the living-room fire at will, and provision is made for gas cooking. The accommodation, which is well above the minimum of the Ministry of Health, includes living room, kitchen and scullery, three bedrooms, and bath room. Of the houses now being erected ten are self-contained cottages and eight are flats, which have two bedrooms instead of three. The total cost is £13,805, which includes £1,755 for foundations rendered necessary by the abnormal site, which varies 32 ft. in level. Despite the high cost of the land (£48 a house) and the extra cost for foundations, the price per house is only about £625, exclusive of fees. The rents to be paid have not yet been decided, but any profits from the scheme are to be devoted to extending it.

A scheme for the establishment of training centres where those who have served in the Navy and Army can learn all the trades connected with the construction of buildings, including the making of *Pisé de terre* and concrete houses, both for ex-Service men resettling in civilian life and the various governing bodies who are trying to build for the general public, is projected. Lieut.-General Sir Alexander Godley has taken up, at Kitchener House, 34, Grosvenor Place, the direction of the work.





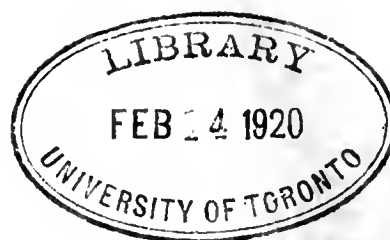
WAR MEMORIAL, SPALDING : NORTH FACADE, FACING CANAL.
Sir EDWIN L. LUTYENS, A.R.A., Architect.



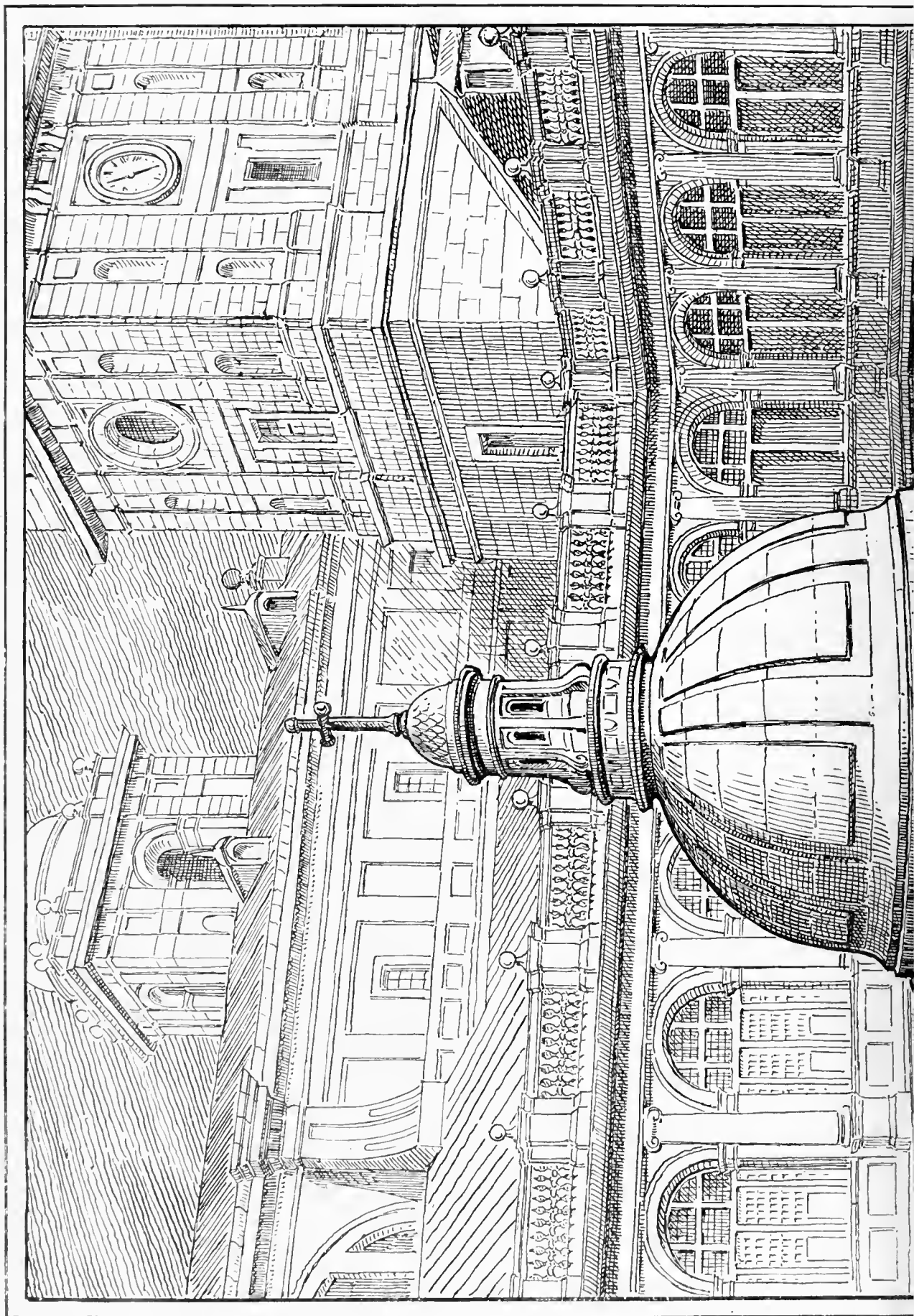
ARRAS TAPESTRY REREDOS WALL HANGING, ETON COLLEGE CHAPEL, WINDSOR.
By the late Sir E. Burne-Jones, Bart. Executed by Morris & Co.

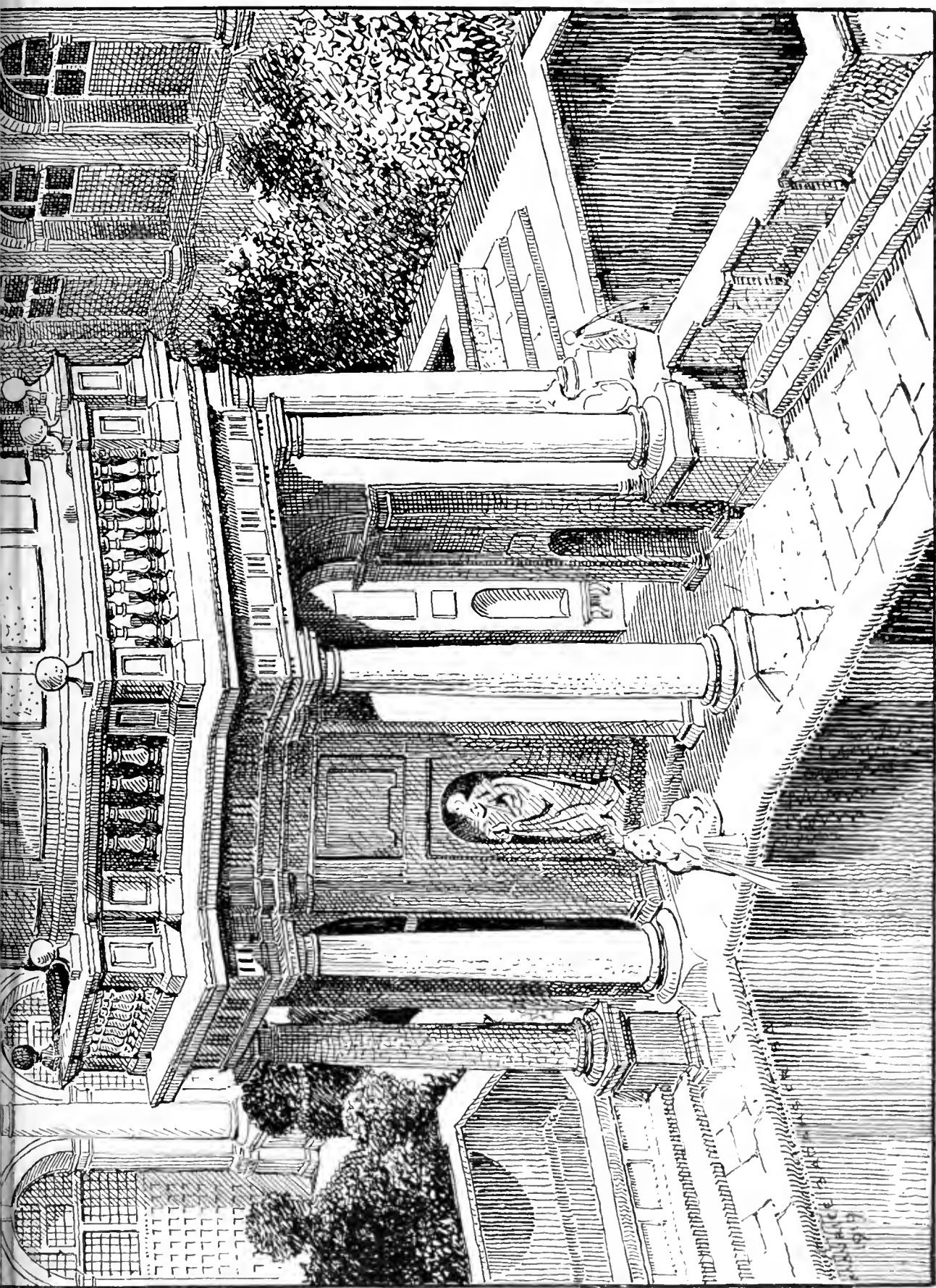


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THE BUILDING NEWS, JANUARY 9, 1920.



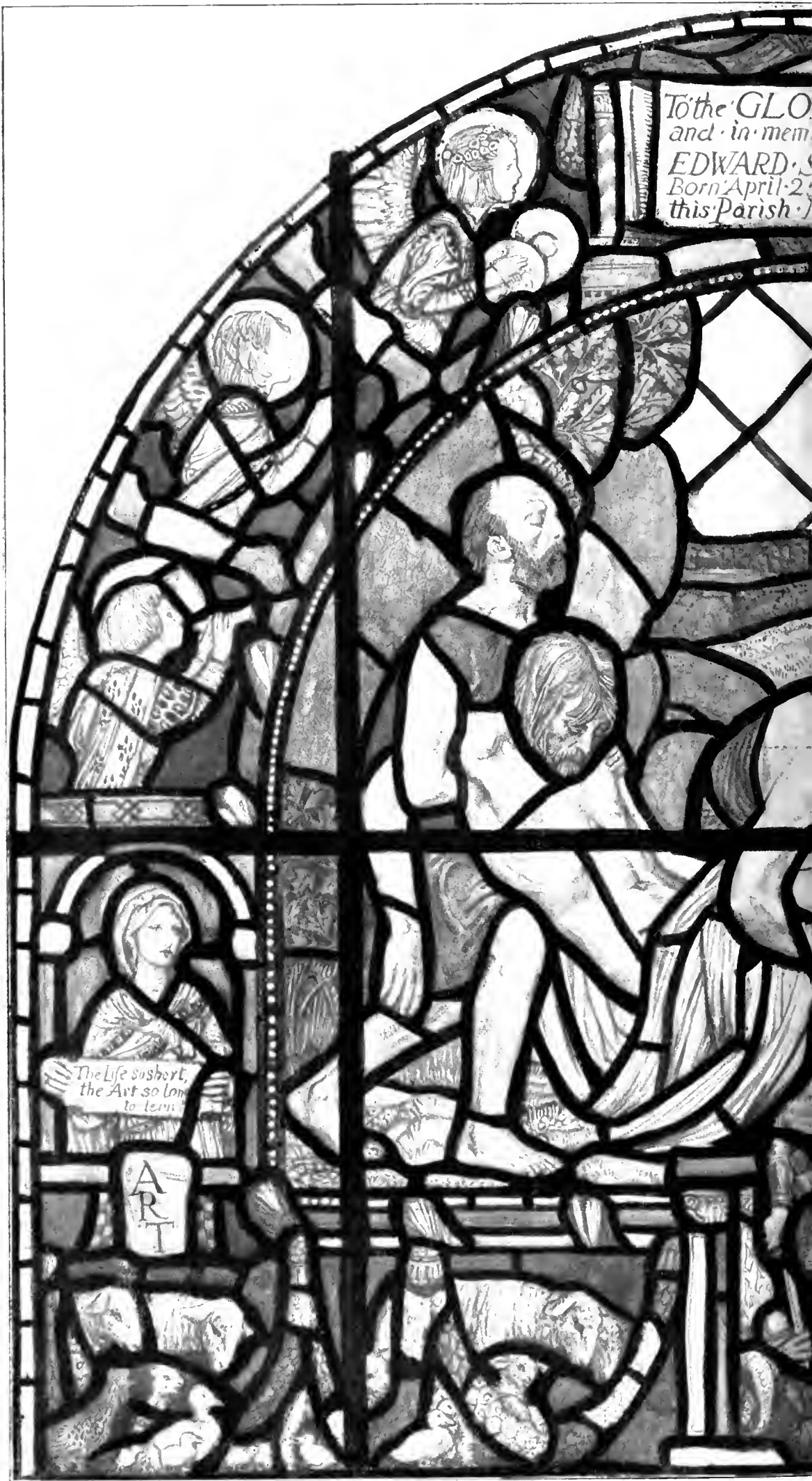


THE ESCORIAL PALACE, MADRID PAVILION IN THE CENTRE OF THE MAIN QUADRANGLE.
JUAN BAUTISTA AND JUAN DE HERRERA, ARCHITECTS 1563-1584: DRAWN BY MAURICE B ADAMS. F.R.B.A



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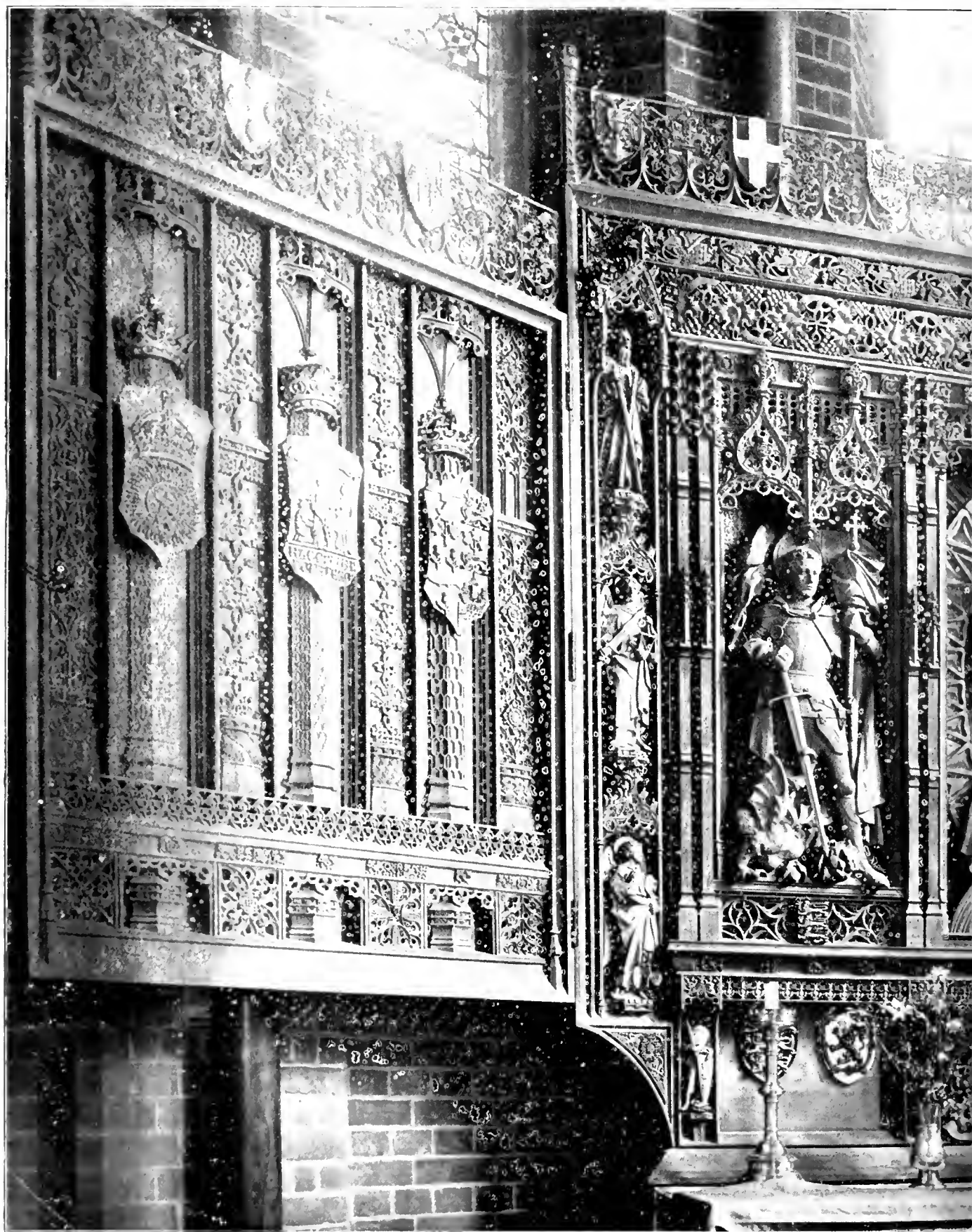
STAINED-GLASS MEMORIAL WINDOW TO EDWARD
Designed and Drawn by M





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NEW REREDOS, ROYAL NAVAL BARRACKS CHURCH, CHATHAM, KENT

JANUARY 9, 1920.



W. D. CARÖE, M.A., F.S.A., F.R.I.B.A., Architect. Mr. NATHANIEL HITCH, Sculptor.



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VIEW OF WAR MEMORIAL, SPALDING

Sir Edwin L.

, JANUARY 9, 1920.

MEMORIAL BUILDING



OSTER GARTH AND GREAT WAR STONE.
ES, A.R.A., Architect.



THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House.

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OUR ILLUSTRATIONS.

Malvern College War Memorial, by Messrs. Maurice E. Webb, M.A., F.R.I.B.A., and Walter Gilbert.
Selected Design: War Memorial, Truro. Mr. Alfred J. Cornelius, M.S.A., Architect; Mr. L. S. Merrifield, Sculptor.

Headquarters of the Royal Artillery: War Memorial Building, London, E.C. Lieut.-Col. J. E. Dixon-Spain, F.R.I.B.A., Architect.
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Spalding War Memorial. Lay-out, plan of Cloister and Garth. Sir Edwin Lutyens, A.R.A., Architect.

Lancing College, Sussex: War Memorial. Messrs. John W. Simpson, P.R.I.B.A., and Maxwell Ayrton, A.R.I.B.A., Architects.

Currente Calamo.

The words "Standard Rent," as used and defined in the Increase of Rent Act, 1915, are still causing trouble in the courts. Rent and Rates are, in the eye of the law, two quite different things. In our dear old Feudal jargon rent "must issue out of the land." Rates are merely modern charges to pay local expenses, and have to be borne by the occupier. But, nowadays, and under our emergency legislation, especially in the case of weekly property, the rates are often paid by the landlord, under a discount, and then fully included in the rent which he gets from his tenant. Now, the point is, do these rates so paid back by the tenant form part of the "Standard Rent," or do they not? This old question came up again, this time before the Court of Appeal, in the recent case of "Isaacs v. Titlebaum." There the plaintiff had, some six years ago, let premises at the East End to the defendant at a weekly rental of £1 9s., inclusive of rates. Having given defendant a week's notice to quit, the plaintiff sued for possession, and a Judge at Chambers made an order in his favour. Defendant now came to the Court of Appeal arguing that the Act of 1915 protected him. His point was that, as the rates amounted to £20 8s. a year, his real rental for the place was under £70, and so the Act applied. The appeal judges held that these rates paid by the landlord, and to him by the tenant, must be reckoned in the rent, which was thus over £70, and so the Act did not apply, and defendant's appeal was dismissed. This decision is important to both landlords and tenants, especially as by it the Court of Appeal in fact confirms a ruling of Mr. Justice Bray to the same effect in a similar case heard last year.

The question of the rent to be charged for new houses, which is just now occupying the attention of deputations to the Ministry of Health, seems hardly likely to be solved in the interests of the tenants. The London correspondent of the *Liverpool Post* says Dr. Addison told him last Friday that he had decided on a strong line from the start. "It is no good pretending," he said, "that things are not what they are. If we are to let houses at practically charity rents, nobody is

going to build. It is essential in the interest of housing in towns that we should take a firm stand on charging as good a rent as we can get. In the case of one of the authorities mentioned, we wrote off, in the first place, one-third of that cost—the extra war cost—and aim at the end of seven years to receive an economic rent on the remainder. I have told them they must charge a rent which is at least three shillings a week more for the new houses than for older ones, provided similar accommodation already exists in the district, and that at the end of fifteen months we shall expect that rent to be put up a further 2s. 6d. This is hard doctrine, but it is essential if we are to get housing on a proper basis in future. I see no prospect of costs going down for a long time to anything approaching what they were before."

Dr. Addison, Minister of Health, explained last Friday at the offices of his Department in Whitehall the procedure necessary for obtaining the State building subsidy promised in order to secure the erection of 100,000 houses within twelve months from the date of the passing of the Act authorising the expenditure of £15,000,000 for this purpose. He also stated that the new local Housing Bonds would be issued this week, and that Sir John Ferguson, General Manager of Lloyds Bank, was going to assist the Ministry's publicity campaign to make the bonds known to investors. Dr. Addison also dealt with the question of rents. He also announced that regulations giving local authorities power to restrain "unnecessary and unessential" building were on the point of issue. Perhaps now we shall begin to get some information of the sort we ask for elsewhere to-day?

Who are the "owners" of condemned ruinous cottages within the meaning of the Public Health Act? A decision arrived at by the Norwich magistrates last week seems hardly compatible with fair play, though quite possibly the Bench were powerless to reach any other. Messrs. Bullard and Sons, Ltd., of the Anchor Brewery, were summoned at the instance of Mr. A. E. Collins, the city engineer, who laid a complaint that three cottages belonging to defendants, situate in Keel and Wherry Yard, King Street, were in a ruinous state, and dangerous to pas-

sengers. Mr. N. B. Rudd, who appeared for the city engineer, said there were tenants in these houses, and it was even more dangerous to them than people passing by. If anything happened the responsible person would be the city surveyor. Mr. Ernest Hugh Buckingham, of the firm of Messrs. Morgan and Buckingham and the surveyors who appeared for the defendants, said Messrs. Bullard were under a wrong impression with regard to the summons. The property belonged to the corporation, and was held by the defendants under a lease. An arrangement was arrived at by the defendants with the City Committee that upon the payment of an increased rent of £8 a year the corporation waived their right to insist upon the defendants keeping the property in repair. Messrs. Bullard therefore considered that they were not entitled to keep the premises in repair. Witness could not admit that Messrs. Bullard were legally responsible. They had no objection to the cottages being pulled down, as they were dangerous. The Bench ultimately made an order that the buildings should be taken down within seven days.

The two papers read at the Surveyors' Institution are so replete with matters of vital interest to all concerned, that we regret our limited space hinders fuller reproduction. The first, by Mr. E. M. Konstam, K.C., O.B.E., dealt with "Land Drainage from an Administrative Point of View," and emphasises the too patent fact that it is doubtful whether there is a single river in England which at the present moment is in a satisfactory condition for carrying away the water that so frequently clogs the pasture land with tufts of rank grass and clumps of rushes, and patches the corn with yellowish green feeble plants. The drawbacks of legislation are pointed out, and the urgency of further effort insisted on. The second paper, "Land Drainage from the Engineering Point of View," by Mr. C. H. J. Clayton, M.B.E., summarised the objects of drainage, and the best means of compassing them. The wide experience of the author as Chief Drainage Engineer of the Board of Trade and Fisheries, is an ample guarantee of the value of the suggestions offered, and the paper deserves the careful study of all landowners and those whose calling it is to assist them to devise and superintend

the improvement of their estates as regards effective drainage.

In his valuable review of "Some Aspects of the Housing Question," at the meeting of the Auctioneers' and Estate Agents' Institute, last Friday, Mr. Frank Hunt dealt incidentally with the price a speculative builder would be likely to give for land which can only be used for housing persons of the working-class. In the opinion of a professional man who is also a M.P., which he quoted, building value would need to be cut down one-half, if not two-thirds, and when this was done the number of years by which that value would have to be deferred must be estimated. The conclusion of the writer was that if the Acquisition of Land Act were properly applied, there would be few cases in which a fair award would give more to the owner than the full agricultural value. He also commented on the probable vast expenditure of money that is imminent. No complete estimate had been made public; but from the basic figures of the estimated need and the published figures of cost, it was obvious that for the Government programme of 500,000 houses as a first instalment, the capital expenditure would run into hundreds of millions of pounds. In addition, there would be the cost of dealing with slum clearances, which owing to the raising of the standard of accommodation would probably be found to be more extensive than in the past. The published London scheme for the erection within five years of some 29,000 houses and the clearance of slums displacing some 40,000 persons was estimated to cost nearly thirty millions sterling. In spite of the vastness of the expenditure involved, he thought that the enhancement in the value of existing houses which would endure to the benefit of the present owners would, after making full allowance for the increased cost of maintenance and repair, amount to an even higher sum.

COMPETITIONS.

BRIDGWATER HOUSING COMPETITION.—EASTBOURNE WAR MEMORIAL.—The Competitions Committee of the R.I.B.A. have decided to recommend the Council to veto both these competitions because the conditions are not in accordance with the published Regulations of the Royal Institute. Pending the issue of the veto, members and licentiates are therefore advised to take no part in the competition.

ILFRACOMBE CONCERT HALL COMPETITION.—The Competitions Committee of the R.I.B.A. desire to call the attention of members and licentiates to the fact that the conditions of this competition are wholly unsatisfactory. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment in the conditions. In the meantime, members and licentiates are advised to take no part in the competition.

The Ministry of Health have informed Berwick Town Council that if the scheme of reconstruction of existing housing in the burgh falling under the heading of slum areas is not pushed forward the Government grant may be withdrawn. The council were advised by the borough surveyor at last meeting that the scheme was two months overdue.

WHAT WE WANT TO KNOW ABOUT HOUSING.

The *Times* has seldom done better national service than by its issue last Friday of its very excellent Housing Supplement, of which we trust every reader has obtained, or will obtain, a copy. In it will be found the practical summaries of the present position of the matter, and suggestions for its further and better pursuance from almost every authority really qualified to help. One thing alone is wanting, and it is no fault of our contemporary that is absent, when even the Ministry of Health itself is shy or slack in imparting it. As Major Barnes says, on page xii.:—"To sum up: (1) Let the Government place their financial proposals above suspicion. (2) Let the Government cease to buy and hold materials or impose restrictions on their import. (3) Let the Ministry delegate complete powers to all local authorities that finance themselves. (4) Let the Ministry and the local authorities take into council the organised bodies of architects, builders, and operatives. When these things are done, all will have been done that can be done to carry out the housing undertaking which has been given to the electors of the country." The first sentence is a sufficient indication of the distrust with which all view the lack of details with regard to the response of the private builder, or the results of the as yet very few issues of loans by the local authorities. Even if the builders' response has been hearty, and the issues of housing loans are being taken up to any appreciable extent, "all will have been done that can be done." If the contrary is the fact, and we fear so, then bad Finance is—as it has threatened to be all along—the rock on which the ship will go to pieces and drown a few more old Pharaoh's armies—not exactly to the tune of Hallelujah, but amid plaintive wails like those of Lord Downham, whose well-meant efforts were paralysed at the start by the Governments forgetfulness of the lesson of Luke xiv. 28, 29, and 30.

The point is emphasised by Mr. C. McArthur Butler, the vigilant secretary of the Society of Architects, on page xii., one of the most informative in the *Times* Supplement. He also touches the spot when he insists—as we have insisted during the past ten years—that, as is once again pointed out by, perhaps, the most competent authority quotable, Mr. A. A. Hudson, an honourable member of the Society of Architects, in the *Times* of April 1 last year, that ever since 1910 the building industry has been hampered and the output of houses decreased nearly to zero. So far Ministerial delays, on both sides of the House, and partisan manoeuvres have frustrated all attempts to repeal the valuation clauses in Mr. Lloyd George's ill-starred Budget, and we were told quite recently by one member of the Government that that is a matter quite apart from present housing difficulties, and must be dealt with, if at all, by itself! A churlish and empirical refusal much on a par with other dicta of the Minister referred to which has brought down on him the ridicule of the representatives of Capital and Labour alike!

Another very practical contribution is that by Mr. Alexander Goddard, the secretary of the Surveyors' Institution, who, *inter alia*, views with approval, which we share and have expressed, the business-like proposition by Mr. A. G. Westacott, which would place the responsibility of finding capital on terms which would have been remunerative to builders, instead of saddling local authorities or the State with the task. Mr.

Westacott, as our readers know, suggested that the Housing Bonds, which should be issued to builders to cover two-thirds of the excess cost, should be repayable at par at the end of 20 years, bearing interest in the meantime at 5 per cent. per annum. The Council suggests that an option of accepting terminal annuities for 15, 20, and 25 years, with a proportionately higher return per annum, might prove an additional attraction in some cases. We think it would and that no practical means of the sort should be ignored. Certainly no single agency could find the £400,000,000 sterling wanted, and therefore no responsible contributing help should be refused.

The best exposition of the builders' attitude we have yet read is contributed by Mr. A. G. White, the secretary of the National Federation of Building Trades Employers of Great Britain and Ireland. He very properly makes it clear that in considering the attitude of building employers their function is mainly to assemble, by means of the plant and labour they employ, the materials required in the erection of buildings, such materials being manufactured by other industries. They have necessarily, therefore, but little control over the cost of the material they use, and are not responsible if the high prices of the materials make the cost of providing working-class dwellings excessive. Other facts show that the organised building industry has loyally tried to do its part in mitigating the pressure of those circumstances which owing to many and various causes, have been forcing up the cost of houses for the people of this country.

Mr. Neville Chamberlain's advocacy on page ix. of some such rational house purchase policy by the encouragement of individual thrift is practical and sound. The three conditions of success he postulates are certainly essential, and would be met, we think, by the adoption of the methods he suggests.

What London is doing is a lucid summary of the work of the London County Council by Mr. Bernard Hoiland, C.B., the vigorous chairman of the L.C.C. Housing Committee, whose loyal recognition of the officers of the council concerned in seconding to their utmost his own efforts a month ago pleased us greatly. As he points out, the Council are completing existing estates and acquiring new building estate in the south-west and south-east. They are also acquiring a solid block of 3,000 acres a little east of Barking, in Essex, and here they propose to build 24,000 out of the 29,000 new dwellings. Here, there will soon rise a town, or towns, with a population of some 120,000 persons, laid out on the best model, with all the adjuncts of a city—parks, allotments, places of recreation, shops, churches, schools, and, it is to be hoped, some factories of a suitable kind. It will be the first example in England of a large city entirely owned by a public authority. Many will succeed it, and soon!

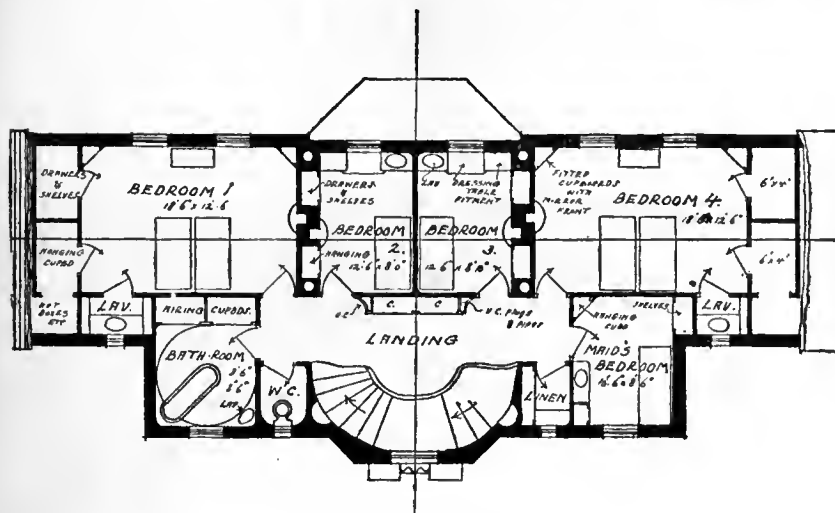
THE KING AND THE SOCIETY OF ARCHITECTS.

The Society of Architects has received from the Home Office a letter stating that the Congratulatory Address from the Society on the conclusion of Peace has been laid before H.M. the King, and that His Majesty was pleased to receive the same very graciously.

A new mechanical painter, invented by one of the workmen, is being used for painting omnibuses in the omnibus factory in Caledonia Road. It does in two-and-a-half minutes work that ordinarily takes two-and-a-half hours.

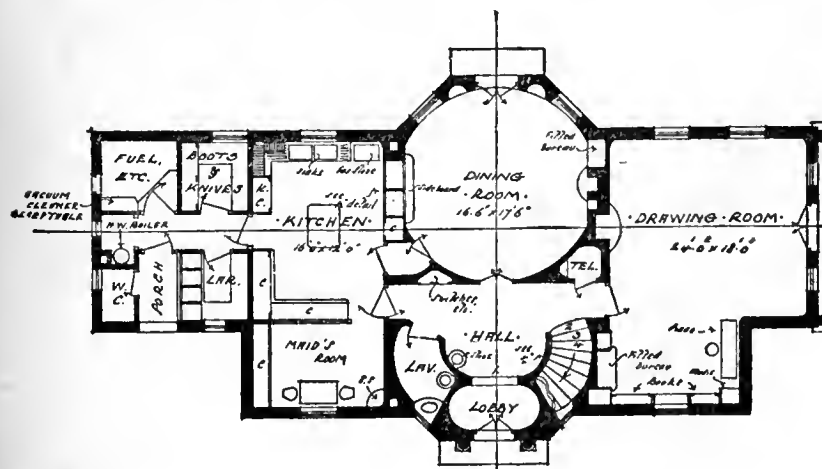


Second Prize. The Entrance Front.



• FIRST-FLOOR PLAN •

Second Prize. The novel bath-room is described in the article.



• GROUND-FLOOR PLAN •

Second Prize. The novel shape of the dining room, it will be seen, does not involve wasted space.

THE DAILY MAIL IDEAL LABOUR-SAVING HOME COMPETITION.

We gave in our issue of Jan. 2 the design of Mr. C. J. Kay, Lic.R.I.B.A., of Bank Chambers, Horsham, to whom the First Prize of £250 was awarded in this competition, in which the assessors were: Mr. R. W. James, M.I.M.E., A.M.I.C.E., 11, Queen Victoria Street, E.C., chairman; Mrs. G. S. Guy, Balvaird, Cheam, Surrey; Miss Clementina Black, 22, Westmoreland Road, Barnes, S.W.; Mr. Courtenay M. Crickmer, F.R.I.B.A., 1, Lincoln's Inn Fields, W.C.

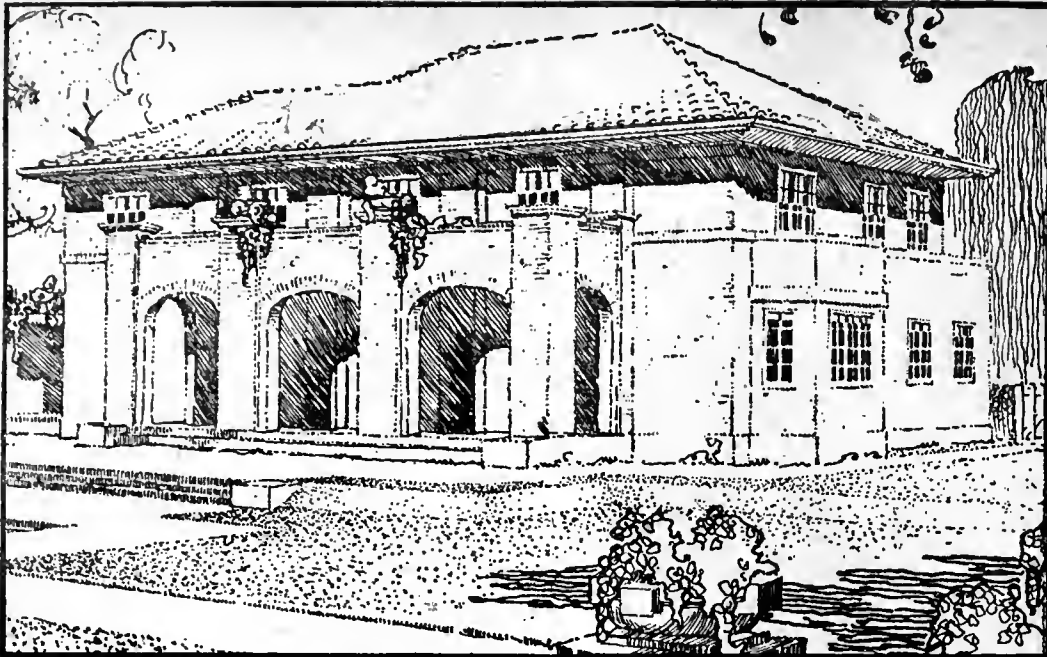
As we also stated in that issue, the Second Prize of £100 was given to Mr. G. Berkeley Wills, A.R.I.B.A., 7, Stone Buildings, Lincoln's Inn, W.C.; and the Third Prize of £50 to Mr. E.W. Armstrong, R.I.B.A., c/o Architectural Association, 35, Bedford Square, W.C.

SECOND PRIZE HOUSE.

Mr. G. Berkeley Wills, who was awarded the second prize, shows a novel arrangement of the bathroom. The difficulty of cleaning behind the bath is obviated by projecting the bath into the centre of the room, the canopy and waste end being built into an angle. The walls of the bathroom are circular for about three feet up, and are tile-lined with a mosaic or tile floor; above, the walls are of white glazed brick. If preferred, the bath could be on wheels, so that it might be detached from the walls altogether, with waste to an open channel. The taps would then be fixed into the wall. The stairs are another feature of this plan. They have no corners or angles, and the balustrade is to be of solid concrete with a hardwood handrail at the top. A combined hot plate service hatch, china cupboard hatch, and sideboard is another innovation in Mr. Wills's plan. Glass, crockery, and silver in general use are kept in the cupboard adjacent to the hot-plate, and extra glass, etc., in the adjoining cupboard, both being accessible from the kitchen and from the dining-room. This management obviates entirely the necessity of carrying any articles of food from the kitchen to the dining-room or vice versa.

THIRD PRIZE HOUSE.

"The chief object in this design," says Mr. E. W. Armstrong, the winner of the third prize, "has been to provide a house which, if need be, can be managed with comfort by one person. The centre of domestic drudgery lies in the kitchen and its offices, and its general placing in relation to the other rooms of the house. The kitchen must of necessity be close to the dining-room, to the laundry,



Third Prize. Entrance Front.

and to the first floor if the person doing the domestic work has to see to the rest of the house as well. The planning is straightforward and logical, every room has been considered, first separately, then in conjunction with the other rooms. All the rooms are large and airy, and the bedrooms and living-rooms get the maximum amount of sunshine."

THE SOCIETY OF ARCHITECTS.

At last night's meeting of the Society of Architects the annual report for the year ending October 31, 1919, was presented and adopted.

The Society has held sixty-eight meetings during the year, of which sixty-one were Council and committee meetings and the remainder ordinary meetings, for the transaction of general business.

Membership.—One hundred and thirty-five candidates were admitted to membership, being 104 in excess of 1918; eleven members were reinstated; and five graduates and four students were elected.

After allowing for deaths, resignations, lapses, removals, and transfers, the total membership on October 31, 1919, was 1,269, made up as follows, the 1918 figures being added for the purpose of comparison:—

	1918.	1919.
Members	982	1,102
Hon. Members	26	26
Retired Members ...	33	35
Graduates	8	12
Students	121	94
Total	1,170	1,269

War Services.—Four hundred and fifty members of the Society in all classes are known to have served in H.M. Forces during the war, 1914-1918, of which number thirty-three gave their lives.

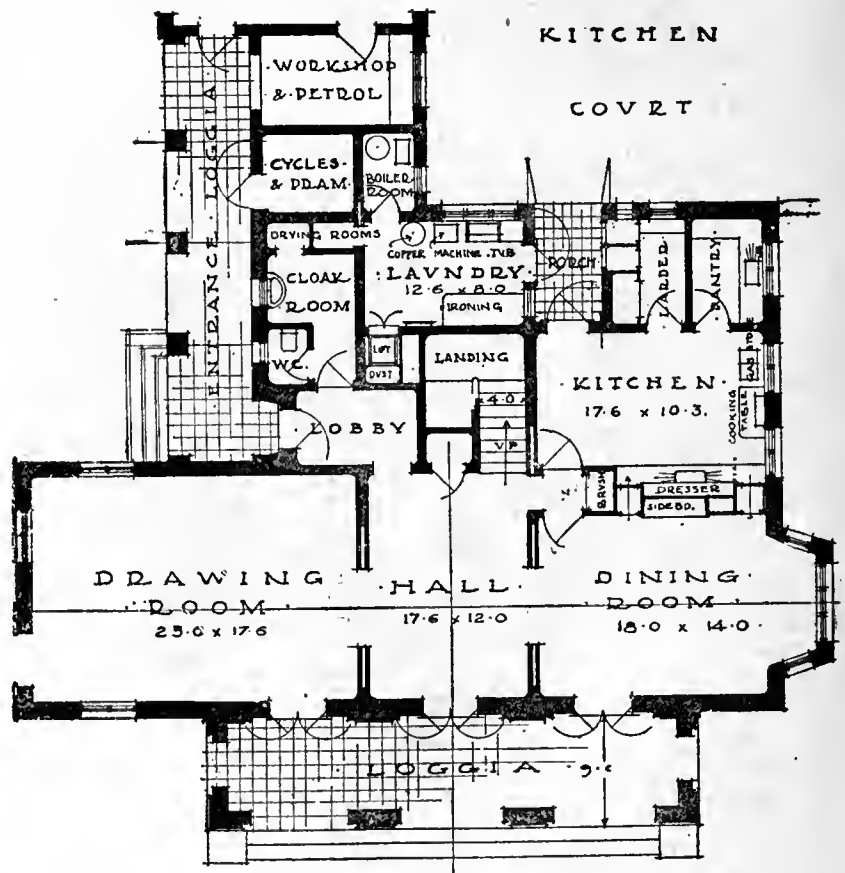
The total number of honours and awards bestowed upon members of the Society for military service was sixty-six.

Secretarial Staff.—Early in the year it became evident that a more adequate staff was required to deal with developments and extensions of the Society's work, and in May last the Council appointed as Assistant-Secretary Captain M. G. Kiddy, late R.A.F. Mr. W. E. Wanmer, who was severely wounded while on service with the Artists' Rifles in France, resumed his duties with the Society on demobilisation on February, 1919. Sergt. J. Jones, of the R.W. Kent Regt., who was also wounded, and whose place was also kept open, decided not to return to his position in the Society.

The Beaux Arts Atelier.—As it was found impossible to obtain suitable premises elsewhere, and the present accommodation was

not sufficient to enable the Atelier to be re-started on pre-war lines, the Council decided to extend the lower ground floor, hitherto occupied by the library, to cover in the open space in the rear, and to hand over to the Beaux Arts Committee, for the time being, the whole of the western annexe, comprising

Publicity.—A record kept of the Society's press publicity programme since June shows that articles, paragraphs and letters communicated or inspired by the Society have appeared on over 200 occasions in the leading London and provincial newspapers and the professional journals. As a result of this



Third Prize. Ground Floor. See how the accommodation for perambulators, cycles, and wet clothes has been arranged.

a self-contained atelier on two floors, with every convenience for carrying on this important educational work, which has been the means of establishing this system of architectural education in this country, and of paving the way to a scheme for co-ordinating architectural education in the country under the auspices of the Royal Academy of Arts.

publicity, the Society's objects have been made better known to the public and to the profession, its influence more widely extended, and its membership materially increased. The Society's views on professional matters are increasingly sought by the Press and by public bodies and architects within and without the Society.

Educational Matters.—In addition to the help rendered to the Beaux Arts Committee, the A. A., and other educational bodies, the Society has constantly advocated through the medium of the Press and in other ways, the advantages which the public, the profession, and the art would derive from the establishment of a Ministry of Fine Arts, containing a national school of architecture. When the Society entertained H.M. First Commissioner of Works, the Right Hon. Sir Alfred Mond, Bart., M.P., and other distinguished guests, including the president of the R.I.B.A., at a luncheon, the question of architectural education was discussed, and the advantages of the Beaux Arts system of training and of the

Society was given to understand that the Committee's findings would be published, but so far no report has been received by the Society.

As it was clear that the tendency of local authorities promoting housing competitions was to follow the unfortunate precedent set by the R.I.B.A. in connection with the National Housing Competition to which the Society took exception on the ground that they violated their own (R.I.B.A.) regulations, the R.I.B.A. was invited by the Society to state what policy they proposed to adopt in the future. The reply was to the effect that all architectural competitions which came within the scope of the regulations and did

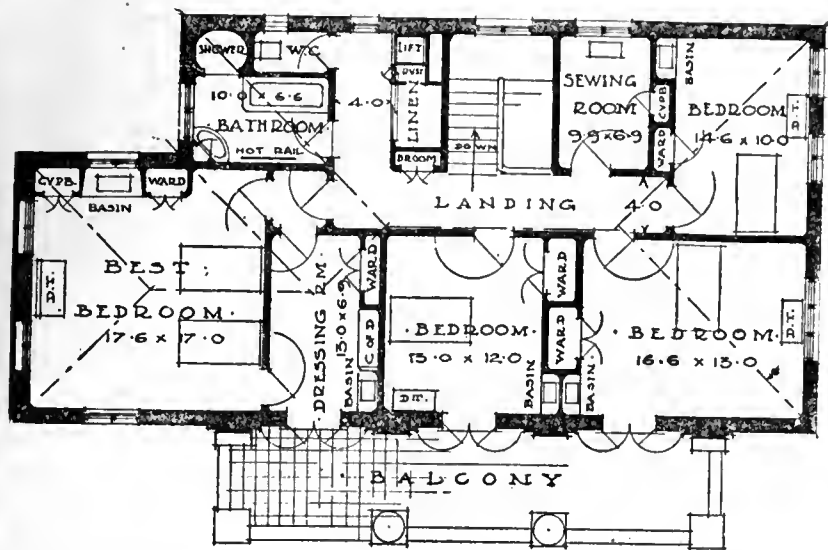
replace him; but the resolution to constitute the Branch holds good, and it is hoped that the initial difficulties will be overcome in due course.

Students Competitions.—On the declaration of Peace, arrangements were made for resuming the Society's Scholarship and Studentships on pre-war lines.

War Memorial—Victory Scholarship.—The members were invited by circular to submit suggestions for a memorial to commemorate the services of members of the Society with H.M. Forces and to perpetuate the memory of the dead. As a result of the proposals received, the Council decided to erect an appropriate tablet on the premises at the expense of the Society, and to invite contributions from members to a "Victory Scholarship Fund" sufficient to provide a sum of £50 per annum when invested, to be utilised by the winner for educational purposes; the scholarship to be open to any person under the age of 30 years.

Statutory Registration.—Arrangements have been made for actively resuming the Society's Registration propaganda at the first convenient opportunity, and no effort will be spared to bring about the desired result.

Scale of Professional Charges.—The Council has been pressed by some members of the Society to revive the proposal for a separate Scale of Charges, and after careful deliberation expressed the view that it was not desirable in the interests of unity to do so if it could be avoided. It was subsequently decided, as a result of circularising the members, to adopt the new R.I.B.A. Schedule, including the special Housing Scale, and to endeavour to obtain permission to reprint them with the Society's name thereon. This permission has been granted in general terms by the R.I.B.A. Council, and both Scales have been printed in the Society's Journal for the information of members.



FIRST FLOOR PLAN

Third Prize. A sewing room and a most pleasant looking balcony are features in addition to labour-saving details.

foundation of a national school of architecture advocated, and afterwards more practically demonstrated by the exhibition of Beaux Arts drawings shown at the Society's premises and explained in a series of criticisms and explanations given by Mr. Arthur Davis, the patron of the First Atelier of Architecture in London.

The Society's lantern slides have been in considerable demand for lectures on architecture to the Army of Occupation, given under the auspices of the Y.M.C.A. by Mr. G. A. T. Middleton. These lectures were attended by hundreds of soldiers, who expressed their great appreciation of the Society's action.

Examinations.—A Graduateship Examination was held at Colombo, Ceylon, in September, 1918, and the Special War Membership Examination in Cologne on October 17, 1919, by arrangement with the Army Educational Authorities, under the direction of Mr. G. A. T. Middleton, of the Pool of Instructors, G.H.Q.

The Council decided, in the interests of those concerned, that candidates who had served in H.M. Forces during the war, 1914-1918, for not less than two consecutive years, or who had been discharged or had resigned their commissions after a less period owing to wounds or other disabilities caused by such service, should be eligible as candidates for graduateship or membership of the society, as the case may be, provided they had reached the age of twenty-one years for graduateship and twenty-five years for membership, and were otherwise eligible and qualified under the regulations.

Future of Architecture.—At the invitation of the R.I.B.A., the Society gave evidence before the R.I.B.A. Committee on the future of architecture. The questions raised related principally to professional education training and unity and statutory registration. The views expressed by the Society's representatives on these and other points were afterwards confirmed by the Council, who intimated their willingness to consider further any proposals put forward by the R.I.B.A. for the betterment of the profession. The

not conform to them would be strictly barred by the Institute.

The secretary of the Society was afterwards made a temporary hon. member of the R.I.B.A. Competitions Committee, and a proposal was made to the Institute Council for the formation of a permanent joint Competitions Committee, which has not yet been formed.

Form of Building Contract.—Representatives of the R.I.B.A. and of the Society met with a view of considering the question of issuing a joint form of building contract. The Institute representatives put forward a suggestion to their Council, the record of which was not agreed to by the Society's representatives, the negotiations became abortive, and the Society decided to issue their own long-deferred form. There has been a considerable demand for these documents from members, and also from public authorities.

Empire War Memorial.—The Society's proposal that an Advisory Committee should be set up, consisting largely if not entirely of architects, to deal with the question of War Memorials involving questions of architectural composition and design, was favourably received by the professional Press.

Minimum Wages for Clerks of Works.—A deputation from the London Association of Clerks of Works waited upon the Council and asked for its support to a proposal for fixing a minimum wage for foremen and clerks of works. The views of the deputation commended themselves to the Council, which expressed itself as in sympathy with the proposals in principle.

Branches of the Society.—An application from members of the society practising in Dublin was received for the formation of an Irish Branch of the Society with headquarters in Dublin, and was approved by the Council and by the general body of members. Unfortunately, Mr. Anthony Scott, the local hon. secretary and prime mover in the proposal, died shortly afterwards, and it has not been possible as yet to

STATUES, MEMORIALS, ETC.

BELGIAN NATIONAL MEMORIAL.—The memorial which is being erected by Belgian residents in this country in gratitude for the hospitality extended to their fellow-countrymen who were driven from their homes and country at the time of the German invasion in August, 1914, is nearing completion, the work of casting the statuary group, entitled "l'Hommage," having just been finished. The setting in marble is the work of Sir Reginald Blomfield, R.A., and the sculptor is a well-known Belgian subject, M. Rousseau. The Office of Works has provided a site in the Thames Embankment Gardens, exactly facing Cleopatra's Needle, which itself bears the ineffaceable marks of German aerial outrage. The unveiling may be expected to take place early in the summer.

MAXWELLTOWN, DUMFRIES, WAR MEMORIAL.—The War Memorial Committee have commissioned Mr. Henry Price, R.B.S., to carry out his design which won the first premium in the recent competition. The Memorial consists of a Scottish Borderer in bronze, 8 feet high, in the act of going over the top, and falling back into his dug-out. The names of 500 Scottish heroes are to be inscribed on a block of grey granite, hewn from the local quarries.

Mr. Abraham Edwin Rhodes Hill, of Temple Road, Beeston Hill, Leeds, architect, son of the late Mr. A. Hill, stone merchant, of Bradford, left £1,941.

The death is announced on January 14, at 36, Tytherton Road, Tufnell Park, of Mr. John Thomas Lee, F.R.I.B.A., architect, aged 75. The funeral service is at St. Michael's, Golders Green, at 10.15 to-morrow (Saturday).

A special committee composed of members and non-members of the council of the Surveyors' Institution in equal numbers, with the president of the institution as chairman, is being set up to consider the various proposals which were made at the ordinary general meeting on December 15 last, with regard to the future activities of the institution. This committee will report to the council, and their proposals will then be submitted to the country branches for their consideration.

Our Illustrations.

MALVERN COLLEGE WAR MEMORIAL.

Major Maurice E. Webb, M.A., in conjunction with Mr. Walter Gilbert, is the architect for this scheme, which includes a memorial cross and terrace wall with sculptured panels in front of the College buildings at Great Malvern, Worcestershire. The accompanying perspective illustrates the entire composition, which necessarily is subordinated to the College façade. The drawing reproduced was exhibited at the Royal Academy last autumn.

SELECTED DESIGN FOR WAR MEMORIAL, TRURO.

This memorial is to be erected to the memory of the fallen of Truro, if the committee are able to raise sufficient funds for the purpose, on a prominent site in Boscawen Street. The memorial was selected by the assessor in open competition in which twelve competitors sent designs. It takes the form of the old Cornish Celtic cross of the 9th and 10th centuries, in Cornish granite, supported by an enriched shaft on a square pedestal. The pedestal also supports a bronze metal figure of Tommy, and a bronze metal tablet with the names of the fallen. The design is by Mr. Alfred J. Cornelius, M.S.A., of Truro, and the sculptor is Mr. L. S. Merrifield, of 116a, King's Road, London, S.W. The cost is stated at £1,450.

HEADQUARTERS OF THE ROYAL ARTILLERY: WAR MEMORIAL BUILDING, LONDON.

Lt.-Col. J. E. Dixon-Spain, F.R.I.B.A., is the architect of this preliminary design for the Royal Artillery War Memorial. The project includes a building forming the headquarters of the regiment in London. The plan provides a series of galleries for the war trophies of the Royal Regiment, a central domed hall in which is placed the memorial to and the names of the dead, and a great hall, with cloak rooms and offices, for regimental meetings.

SPALDING WAR MEMORIAL: LAY-OUT PLAN OF CLOISTER.

Last week we published Sir Edwin L. Lutyens' drawings for the War Memorial Cloister and Garth where "the great war stone" is to stand, our plates giving two perspective views. To-day we reproduce the architect's plan of the lay-out, with the lily pond and cross in centre of the pool. The elevations also are included on the sheet.

LANCING COLLEGE WAR MEMORIAL.

This design is in the shape of a wayside shrine, and has been prepared as a memorial to those students of Lancing who fell in the war. Portland stone is intended, and the site is at the south-east angle of the terrace on which the great chapel stands, beside the main road. The drawing here reproduced was exhibited at the Royal Academy last year. Mr. John W. Simpson, P.R.I.B.A., and Mr. Maxwell Ayrton, A.R.I.B.A., are the architects.

Brentford Council have been informed that the Housing Commissioners regarded their site for housing as the dearest in England. The cost was £1,000 per acre.

The Bangor City Council, dismayed by the high figures in the tenders of local builders, have decided to proceed with a portion of their housing scheme by direct labour, and have instructed their surveyor to purchase plant for making concrete blocks. A member stated that in the lowest tender received the estimated cost of each house was placed at £950.

THE ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND.

ANNUAL GENERAL MEETING.

The annual general meeting of the above body was held on December 18 at 31, South Frederick Street, the President, Mr. W. Kaye-Parry, F.R.I.A.I., in the chair. There was a fair attendance of registered members.

The minutes of the previous meeting having been read and signed, the President stated that, as a result of the ballot, the following were elected members of council for 1920:—Messrs. J. H. Webb, Frederick Hayes, R. H. Byrne, F. G. Hicks, A. G. C. Millar, E. Bradbury, R. M. Butler, G. L. O'Connor, S. M. Ashlin, together with Mr. Geo. F. Beckett, representing the Architectural Association of Ireland.

The Hon. Secretary, Mr. H. Allberry, read the report of the council for the past session.

REPORT OF COUNCIL.

The council beg to submit to the members of the institute the eightieth annual report of its proceedings. The number of registered members on the roll at the present time is 97, of whom 32 are Fellows; there are also two hon. Fellows, one hon. member, and six students, making a total of 106 as compared with 88 last year.

During the year the following architects were elected members of the institute:—Messrs. M. J. Burke, T. F. Strahan, C. A. Harrington, R. J. Hopcraft, W. Morris, C. L. Robinson, A. E. Williams, Vivian du Bedat Smythe, H. E. Coyle, L. W. Ingham, J. W. O'Sullivan, F. P. Russell, J. J. O'Hare, and A. A. Murphy, all of Dublin; R. H. Gibson, Belfast; D. A. Levie, Cork; R. Jones, Tipperary; J. J. Bowen, Formoy. Mr. W. J. Roome, Greenisland, Co. Antrim, and Mr. D. J. Buckley, Mallow, have been reinstated as members, and Mr. G. P. Beater has been elected to the rank of Fellow. The council accepted with regret the resignations of Mr. W. G. Clayton, elected in 1895, from membership, and of Mr. J. J. Robinson from the studentship of the institute.

During the year the Peace Treaty was signed, and the period of enmity, devastation, and slaughter, during which the whole civilised world experienced unparalleled suffering and loss, was thus formally terminated. The council, in welcoming the safe return of the majority of those members of the institute who courageously bore a part in the war, and mourning the loss of those who laid down their lives at the post of duty, trust that, under Providence, an era of peace and goodwill may promote concord between all communities and mitigate the sorrows of those who have been bereaved.

The council have held twenty meetings during the year, of which six were special meetings.

In view of the signing of the Armistice in November, 1918, and the consequent rapid demobilisation of the armed forces, the council decided not to renew their resolution of January 7, 1918, reducing the subscription of registered members.

The articles of association and bye-laws, revised in accordance with the directions of the institute and sanctioned by the Board of Trade, were received from the solicitors and adopted by the council. After the statutory extraordinary general meetings of April 10 and May 8, the new articles and bye-laws became operative, and copies have since been forwarded to each registered member and student.

Consideration of abbreviated conditions for "small contracts" and for "cost and percentage contracts," referred to in the last report of the council, was continued by the Professional Practice Committee. As a result, the council have approved the respective sets of conditions, but do not consider it expedient to print and publish them under present circumstances as officially sanctioned. Members will find them very useful as a basis upon which to draw up their own conditions, and on application to the hon. secretary they can obtain them on loan for a week at a time.

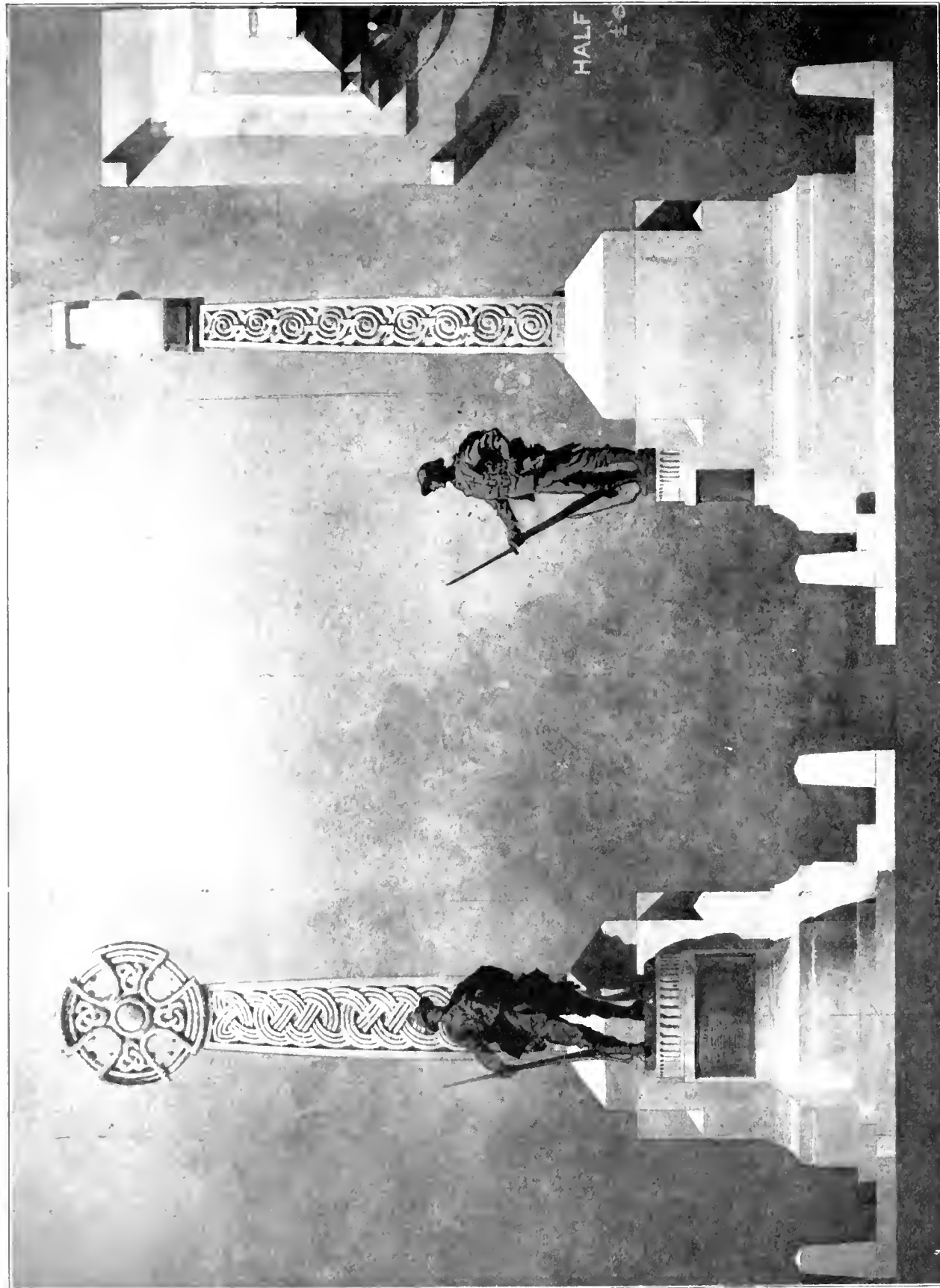
The Royal Institute of British Architects have considered and approved a revised scale of charges which in the ordinary course was

submitted to your council. It was found that both in Great Britain and at home a strong difference of opinion existed as to the desirability of interfering with a scale of charges which, by long usage, had become universally recognised, particularly at a time when the cost of building had increased. The council circularised the allied societies on the subject, of which six generally approved and one opposed the revision, while one offered no definite opinion. After discussion extending over two meetings, the council adopted on June 30 a resolution, which was forwarded to each of the registered members in September last.

A District Directorate of the Appointments Department, Ministry of Labour, was appointed in Dublin to deal with the training of demobilised officers and men, and on the receipt of a letter in January from the Royal Institute of British Architects requesting the council to nominate a member to act on the District Selective Committee, your President was nominated thereon. Since then the council have naturally been in close touch with the Appointments Department in connection with the training of ex-officers and men in the profession of architecture. For obvious reasons the scale of fees at which architects offered to accept these trainees differed considerably in amount. From inquiry made it was learnt that the department was prepared to allow £50 per annum for each year of pupilage up to three or four years, and the council therefore considered this figure, although below the average scale of premiums, should be uniformly adopted. They also thought that under the special circumstances the cost of the external training of the trainees at art and technical schools and at the Architectural Association of Ireland should be defrayed by the principal out of the premium, and that the trainee should at the earliest possible stage of his training be given a small salary. The proposal was welcomed by the department. The registered members of the institute were accordingly so informed by a circular of April 28. On the strength of this arrangement a number of architects accepted trainees as pupils, but in July last the council received complaints that the Appointments Department were not fulfilling their obligations. On September 20 a letter was received from the headquarters of the Ministry of Labour requesting the institute to co-operate in the work of re-settlement, and on October 4 the council was informed of a decision by the Ministry that no premium would be paid by the Government to architects accepting ex-service men as pupils, as the Treasury held that the active service given to the country by these candidates should be regarded as an equivalent to premiums. The council feel that, while the Treasury defray the fees, however considerable, of candidates who can receive professional and technical training in other professions by attending universities and colleges, it is quite illogical and without reason to withhold a fee in a profession for which training must be received in the office of a qualified architect, whose loss during the war may have been heavy, and who is now, apparently, expected to increase his loss by devoting individual time and attention to the training of a totally inexperienced pupil without any reimbursement. The council, therefore, laid a strong statement of their views before the Appointments Department, and your President accompanied a deputation to London to submit the council's views to the Minister of Labour. The result of the correspondence and personal interviews has, however, been quite unsatisfactory, and, in view of the fact that there seems little prospect of the Appointments Department being in a position to honour their obligations, the council, on December 8, decided that the interests of the pupils, which are necessarily paramount, would not be served by further protest and action, and resolved to recommend members of the institute with whom trainees have been placed to accept the situation as far as lies within their power.

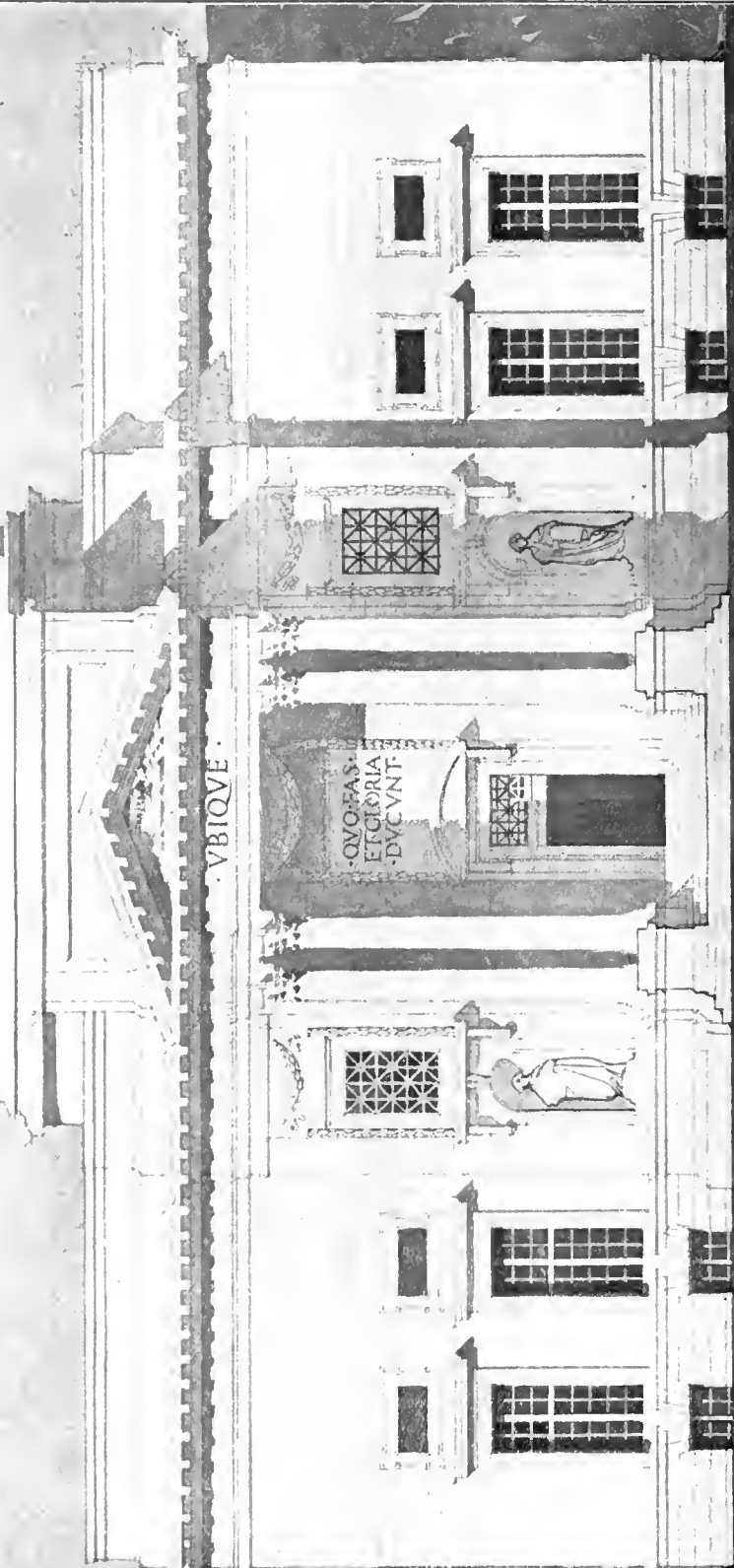
Reference was made in the last report to the action taken by the council to secure the employment of qualified architects for housing schemes and for the promotion of an urban housing competition. The council early in

(Continued on page 43.)



SELECTED DESIGN, WAR MEMORIAL, TRURO, CORNWALL.
Mr. ALFRED J. CORNELIUS, M.S.A., Architect. Mr. L. S. MERRIFIELD, Sculptor.

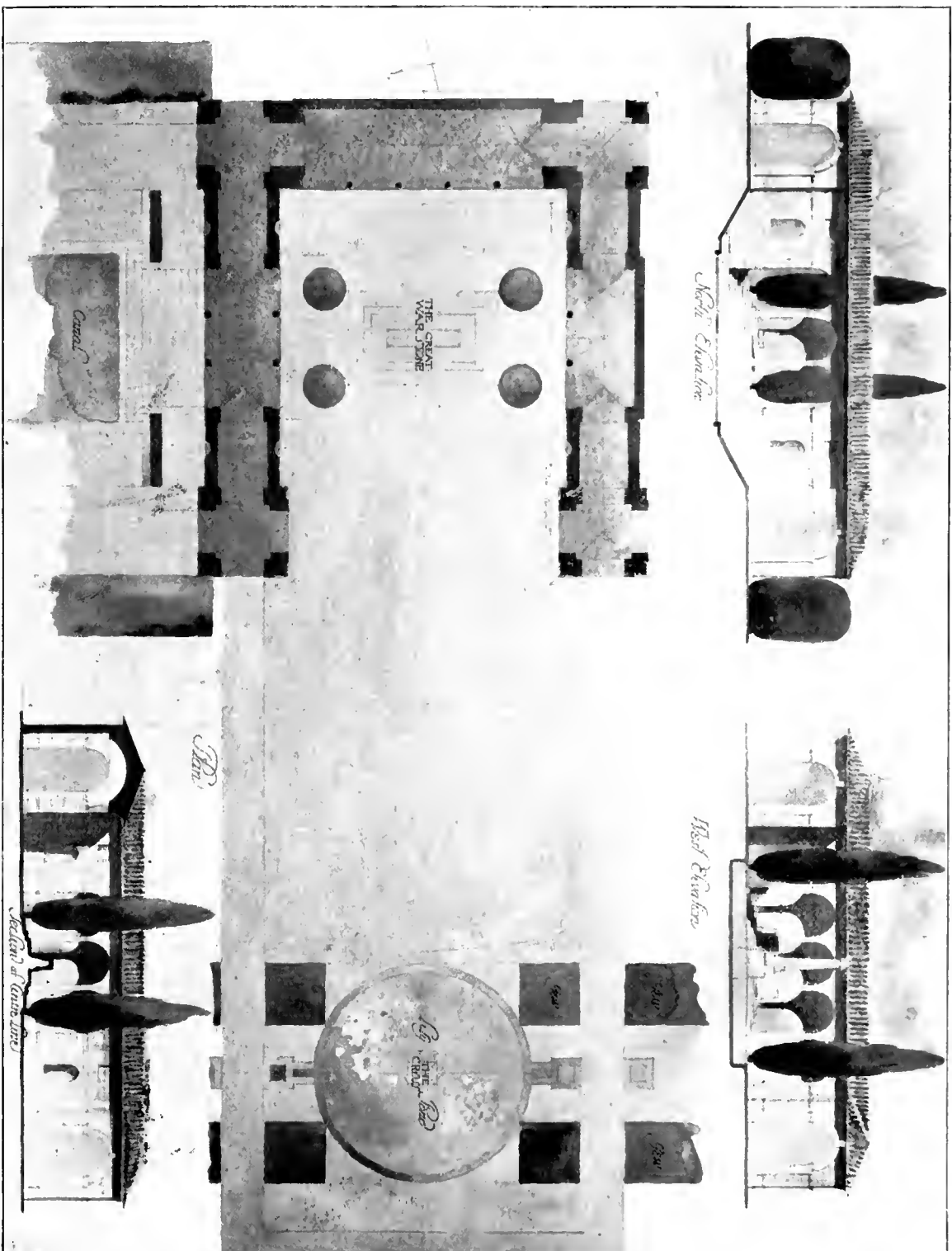
HEADQUARTERS OF THE
ROYAL ARTILLERY IN
LONDON.



ROYAL ARTILLERY
WAR MEMORIAL.

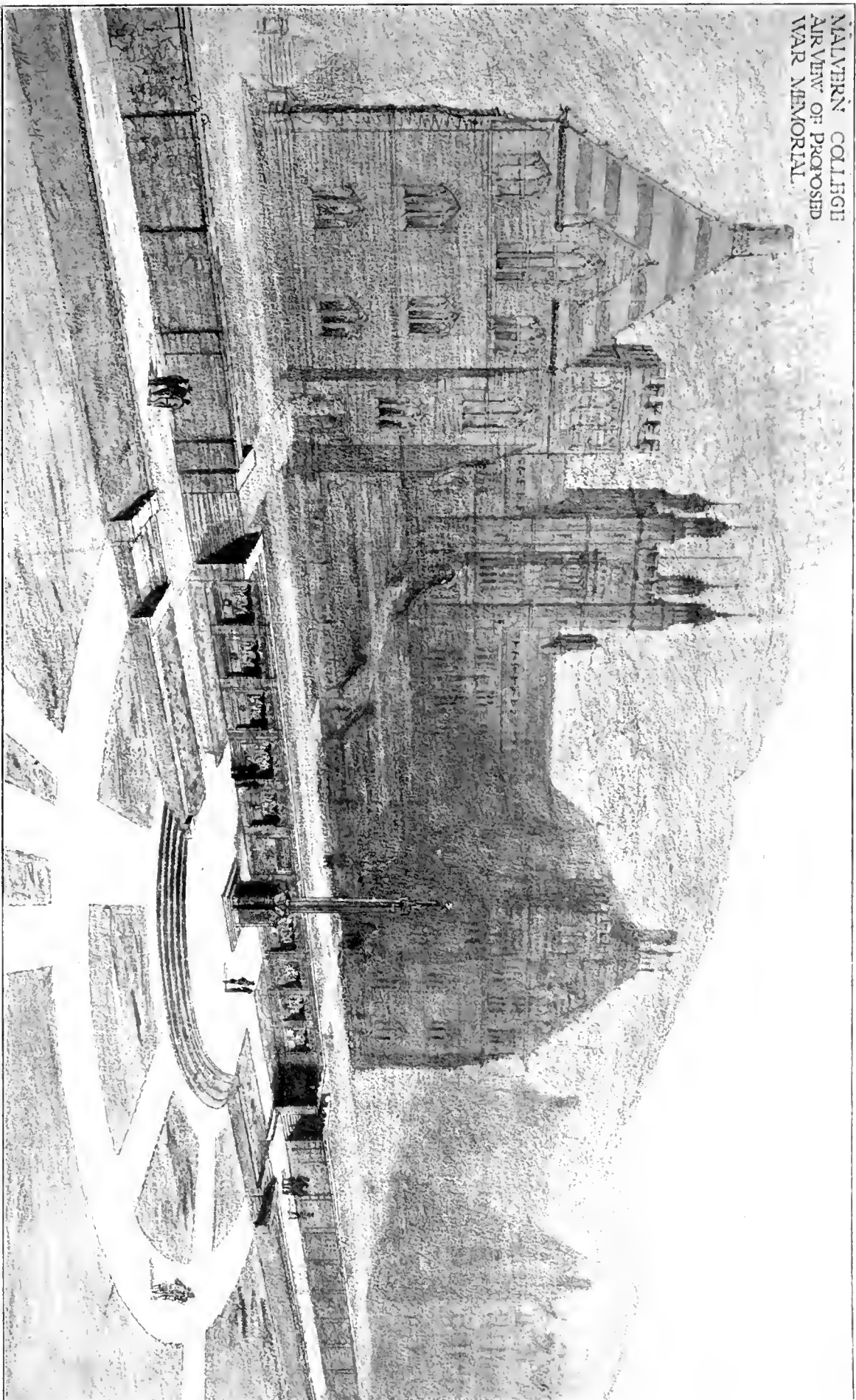
J. E. DIXON-SPAIN
ARCHITECT.

LIEUT.-COL. J. E. DIXON-SPAIN, F.R.I.B.A., Architect.



SPALDING WAR MEMORIAL: LAY-OUT PLAN OF CLOISTER AND GARTH.
SIR EDWIN L. LUTYENS, A.R.A., ARCHITECT.

MALVERN COLLEGE
AIR VIEW OF PROPOSED
WAR MEMORIAL.



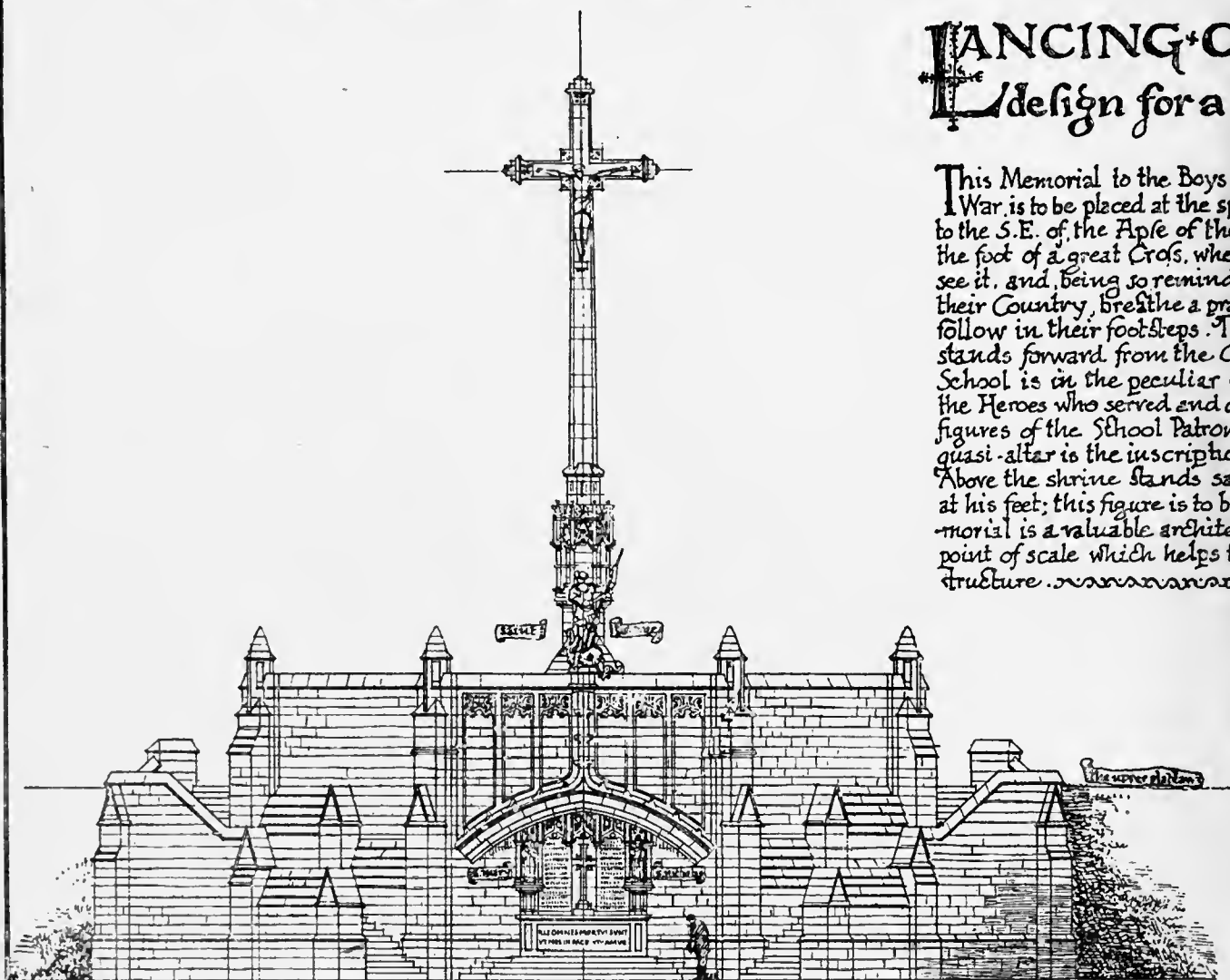
MALVERN COLLEGE WAR MEMORIAL.
By Messrs. MAURICE E. WEBB, M.A., F.R.I.B.A., and WALTER GILBERT.



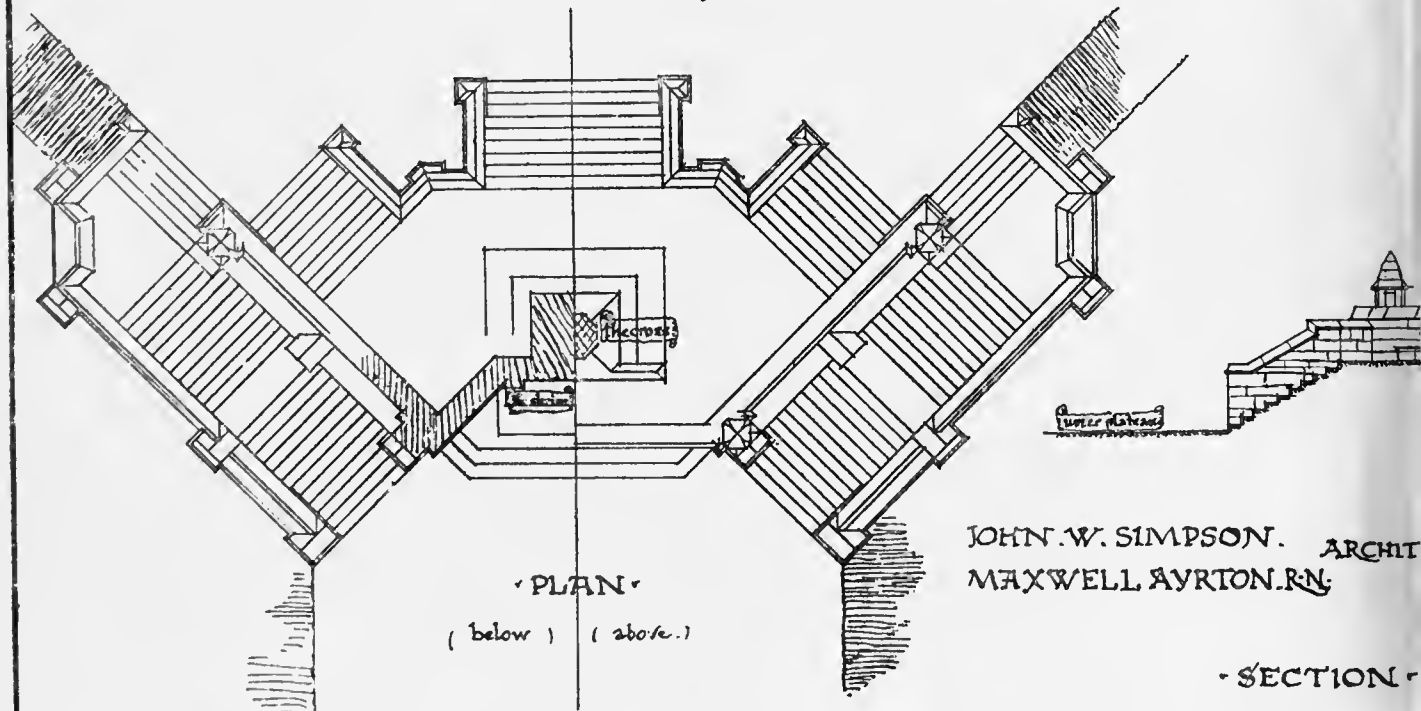
39-42.

LANCING COLLEGE Design for a War Memorial

This Memorial to the Boys of Lancing War is to be placed at the spur of the S.E. of the Aisle of the Chapel the foot of a great Cross, where all see it, and being so reminded of their Country, breathe a prayer to follow in their footsteps. The Cross stands forward from the College School is in the peculiar charge the Heroes who served and died. figures of the School Patrons, and quasi-altar is the inscription. The Above the shrine stands saint George at his feet; this figure is to be in bronze. The memorial is a valuable architectural point of scale which helps the eye to the structure.



• ELEVATION • on the lower level

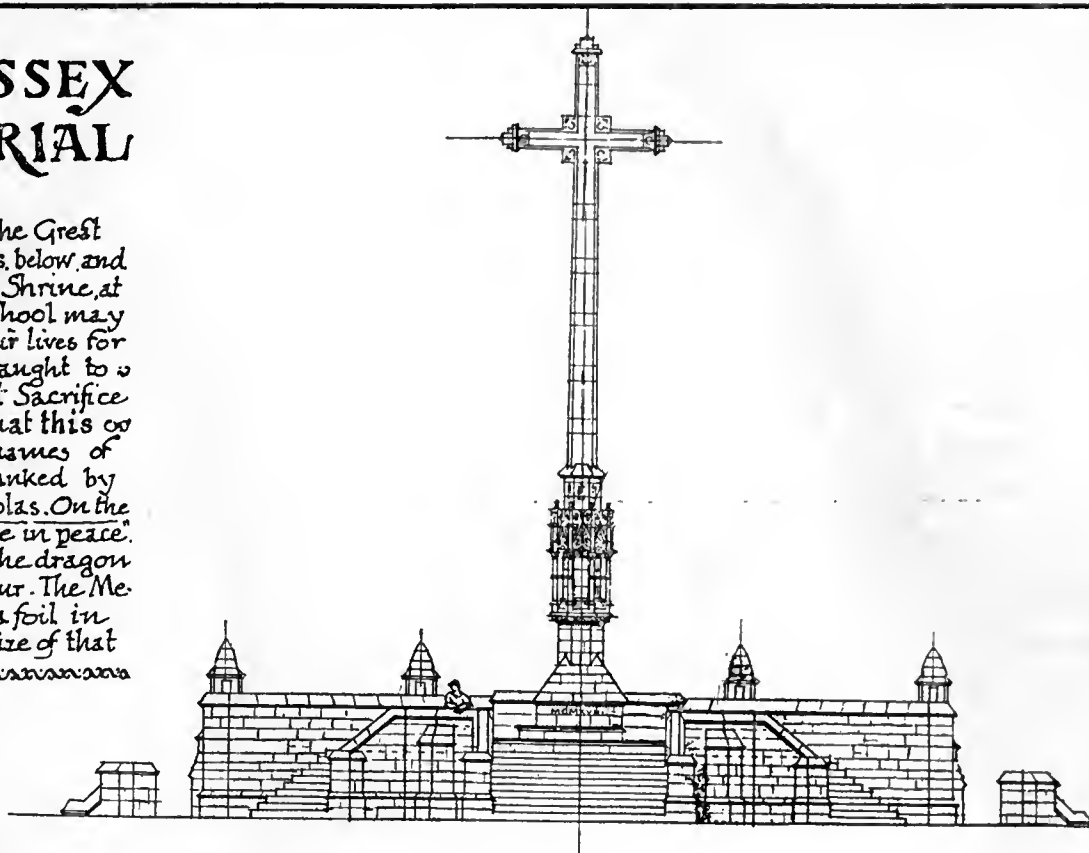


• PLAN •
(below) (above)

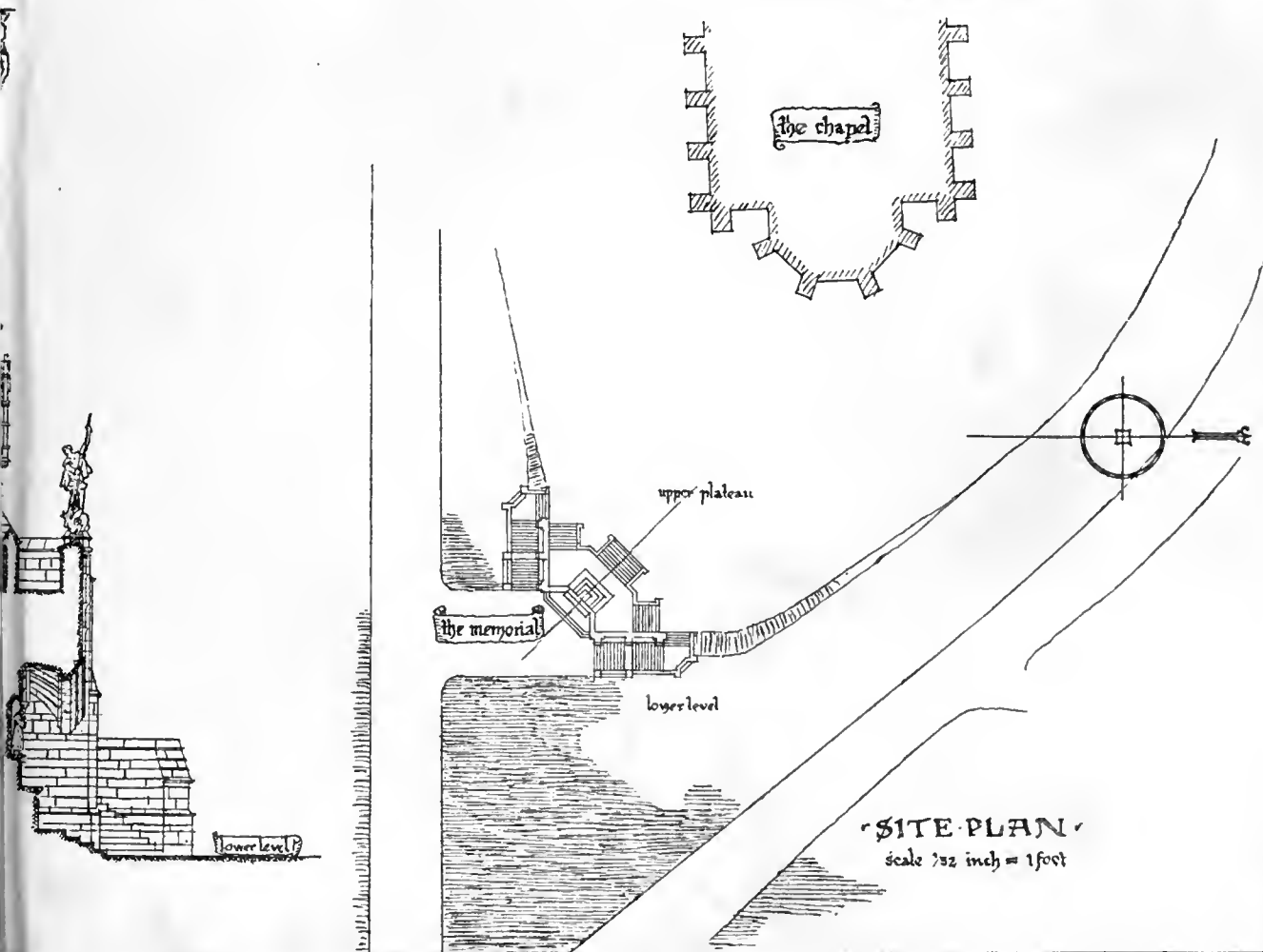
JOHN W. SIMPSON. ARCHT
MAXWELL AYRTON.R.N.

• SECTION •

College who fell in the Great
 plateau which projects below and
 forms a wayside Shrine, at
 approaching the School may
 who laid down their lives for
 boys who are being taught to
 symbolic of the Great Sacrifice
 things, in witness that this co
 re Church. The names of
 on marble slabs, flanked by
 ry and saint Nicholas. On the
 ed that we may live in peace
 of England, with the dragon
 with gilded armour. The Me
 nnt to the Chapel, a foil in
 precise the great size of that



'ELEVATION' on the upper plateau



'SITE PLAN'
 scale 1/32 inch = 1 foot



(Continued from page 30.)

the year again brought these matters to the attention of the Government, with the result that the Treasury authorised an expenditure of £650 on an open competition for designs for industrial dwellings in Irish urban areas, and directed that the competition should be held under the auspices of this institute. The conditions were drafted by a sub-committee and approved by the Treasury and the Local Government Board, the assessors appointed being your President and Messrs. T. J. Byrne, A.R.I.B.A., and H. Seaver, F.R.I.A.I. The sum allocable for prizes was fixed at £500. Owing largely to the delay which occurred in sanctioning the competition, which was therefore held in the early summer, at a time when architects were abnormally busy, and owing to the comparatively short period allowable for the submission of the drawings, only twenty-two architects competed, submitting forty-three schemes. The assessors, when examining the drawings, invited and obtained the assistance and advice of Mr. Farrelly and Mrs. McDermott, representing the Dublin Trades Council. The prizes were awarded as follows:—

Part I. Section A.—1st Prize £100, P. H. Elliott, Esq., Carragh Camp, Co. Kildare. 2nd Prize £50, Messrs. O'Callaghan, Webb and Giron, 31, South Frederick Street. 3rd Prize £25, H. J. Lyons, Esq., 14, South Frederick Street.

Part I. Section B.—1st Prize £100, Messrs. Donnelly, Moore, Keefe, and Robinson, 13, Lower Sackville Street. 2nd Prize £50, J. J. McAuley, Esq., 40, Belmont Avenue, Donnybrook, and P. J. Brady, Esq., Broomfield, Ballyhaise, Co. Cavan.

Part I. Section B.—3rd Prize £25, Messrs. Batchelor and Hicks, 80, Merriem Square, South Dublin.

Part I. Section C.—1st Prize £50, Messrs. McNamara and Burns, 192, Great Brunswick Street, Dublin. 2nd Prize £25, W. H. O'Donnell, Esq., 35, Palmerston Road, Rathmines. Part 2.—1st Prize £50, Messrs. Beckett and Harrington, 97, Stephen's Green, Dublin. 2nd Prize £25, H. J. Lyons, Esq., 14, South Frederick Street, Dublin.

The following were commended in Part I.—Mr. Arthur Williams, Knocknacool, College Rd., Cork, Messrs. Beckett and Harrington, and Mr. J. St. John Phillips, 16, Donegal Square, South Belfast.

In Part II.—Mr. Arthur E. Williams, Dunleary House, Sutton, and Messrs. W. H. Byrne and Sons, 20, Suffolk Street, Dublin.

By kind permission of the Technical Education Committee of the Dublin Corporation, an exhibition of the drawings was held at 18, Rutland Square, and was largely attended by members of the profession and the general public. A selection of the premiated designs has been incorporated in a book of considerable interest issued by the Local Government Board and published at 3s. 6d. net.

Meanwhile, on the appointment of a new Chief Secretary for Ireland, his attention was called to the correspondence that had taken place between the council and his predecessor on the subject of the employment of qualified architects on housing schemes, and he was asked to receive a deputation from the council that the views of the institute, as representing the profession in Ireland, might be laid before him. Mr. Macpherson was unfortunately unable to receive the deputation, and the Housing of the Working Classes (Ireland) Bill was introduced without any reference to this important matter. Your council, fearing a repetition of the undesirable conditions appertaining to the Labourers (Ireland) Act, 1906, drew up a complete statement of their position, which was forwarded to the Chief Secretary, the Local Government Board, and various members of Parliament, from whom sympathetic replies were received. On May 5 the Local Government Board issued a circular to all local authorities directing that all housing schemes should be prepared by competent architects, and that where the local authority have in their employment a properly qualified engineer or surveyor he must obtain the assistance of competent architects in preparing the plans. The council regarded this clause as one of great importance to the profession, but felt that it was of equal or greater importance that the qualifications of an architect should not be left entirely to the judgment of a Government department. They therefore continued to press their views upon the Ministers, but unfortunately the Bill passed the House of Commons without the addition of any satisfactory clause on the subject. Through the kind interest of Mr. James MacMahon, the Under-Secretary, the Chief Secretary consented to receive your hon.

secretary on July 25. The latter presented for favourable consideration two draft clauses, which the council held should either be incorporated in the Bill or inserted in a subsequent Local Government Board order with a view to the protection of the profession, and to ensure that the thousands of working-class dwellings proposed to be erected in this country should be well designed and well built under the supervision of qualified persons. The Chief Secretary was thoroughly in sympathy with the views expressed, and as a result of the interview the council are glad to record that at the last moment a clause was inserted in the Housing of the Working Classes (Ireland) Bill, 1919, as follows:—"The Local Government Board may make rules for carrying the Housing Acts into effect, and in particular for prescribing the duties, conditions of employment, and qualifications of officers and other persons employed by local authorities in the execution of those Acts; provided that any rules with respect to the qualifications or conditions of employment of architects to be so employed shall be made after consultation with the President of the Royal Institute of the Architects of Ireland." This clause has been interpreted by the Local Government Board in a generous spirit, and the members of the institute will have observed from the Board's Order, recently circulated, that a panel of architects who may be employed on housing schemes by local authorities has been created; that upon this panel registered members of this Institute and of the Royal Institute of British Architects practising in Ireland have, *ipso facto*, been placed, and that any other person who may be employed must submit his qualifications to a committee specially appointed to consider them, consisting of the Housing Committee of the Local Government Board, assisted by Messrs. A. E. Murray and G. P. Sheridan, members of the Council of this Institute. Your council feel that the result attained will not only prove of ultimate benefit to the whole architectural profession in Ireland, irrespective of membership of this institute, but will also tend to safeguard the industrial classes against the evils arising from badly designed and ill-constructed houses. The President and the council have been in close contact with the Housing Committee of the Local Government Board on many subjects connected with housing schemes, and have advised on the supply of materials, standardisation of fittings, the employment of draft specifications and kindred matters. A recommendation has been made to the committee that no clerk of works should be employed on housing schemes without the approval of the architect to the scheme, and that no contractor should be employed on housing schemes until he has satisfied the solicitor to the local authority of his solvency and the architect of his competency.

In January last the R.I.B.A. submitted a scale of fees for housing schemes to the consideration of the Council, which, with a few amendments, was adopted and a copy sent to each member for his guidance. Subsequently the British Institute made some slight revisions in the scale which the Council thought it was unnecessary to adopt.

The advice of the Council having been sought in respect of the selection of an architect for a housing scheme, it was decided to create a small panel of the members of the Institute, from which, upon similar requests, a selection could be made. This panel consists of ten architects practising in Leinster, five in Ulster, and five in Munster, and has been prepared by means of a full ballot of the registered members.

The Dublin Watch Committee held an exhibition of model houses in Dublin towards which the Council voted the sum of £3 3s.

The Institution of Civil Engineers, Ireland, having proposed a conference on questions of reconstruction, your President, Messrs. F. Batchelor and R. H. Byrne were appointed to represent the architectural profession upon a committee which includes representatives of the engineering and other structural professions, and which will keep in touch with schemes of reconstruction, so that the interest of the public and the professions concerned may be safeguarded. The Council

voted the sum of £3 3s. towards the expenses of this joint committee.

It having been brought to the notice of the Council that the widow of a deceased Irish architect was in extremely straitened circumstances, the Council, in view of the sad and urgent nature of the case, voted a sum of £5 5s. towards her immediate assistance, and obtained for her through the Architectural Benevolent Society a further grant of £15.

When it was learnt that the Government proposed to establish a Council of Public Health for Ireland, the Council submitted a resolution to the chief secretary requesting that an architect should be appointed upon the Council. When the Council was established it was observed that, while the medical profession was largely represented thereon, no member of the architectural profession had been included. This omission can scarcely be regarded as being in the interests of public health, and the Council again called the attention of the chief secretary to the matter. A reply has been received stating that on the occurrence of the first vacancy on the Public Health Council the claims of the architectural profession will be fully considered. Your Council do not regard this promise as fully meeting a reasonable demand.

The Post-War Committee of the American Institute of Architects have sought the assistance of the Institute towards the exhaustive analysis of the conditions affecting the practice of architecture, which the former are now making. The subject, which is extremely interesting, has been referred to the Professional Practice Committee for report.

The annual dinner, a function which has been in abeyance during the war period, was held at the Shelbourne Hotel on February 27, forty-nine members and guests being present.

The prize of £10 10s. offered by the Institute to the members of the Architectural Association of Ireland was won by Mr. C. P. MacNamara, 16, Rutledge Terrace, South Circular Road, the assessor being Mr. T. J. Byrne, A.R.I.B.A. The Council has again offered the prize for competition in the present session, the assessor being Mr. E. Bradbury and the subject "A block of offices and shops."

The Council note with satisfaction the ever-growing utility of the Architectural Association as a means of training students and for promoting their social intercourse, and consider that the policy of the Association in preparing their younger members for the studentship examinations of the Institute will add greatly to the cordial co-relationship which exists between the two bodies. Mr. G. F. Beckett, President, has been elected to represent the Architectural Association on the Institute Council.

The attention of the Irish National War Memorial Committee has been drawn to the desirability of instituting a competition before a design is selected. It is now understood that the Committee intend to pursue this course.

(To be continued.)

Notice is given that a meeting of the members of the Chartered Surveyors' Golfing Society will be held at The Surveyors' Institution, 12, Great George Street, Westminster, on Wednesday, January 23, 1920 at 5.30 pm., to decide upon matters arising upon the revival of the Society and to elect officers.

The ratepayers of Hookhife, Bedfordshire, have forced the local Council to withdraw an obnoxious rate for sanitary work which it was subsequently decided not to carry out, and the ratepayers at a mass meeting pledged themselves not to pay the rate. The local Council, finding that the money could not be collected, have decided to cancel the rate. Only two inhabitants paid it, and their cheques are to be returned.

At a meeting of the Council of the Royal Society of Painter-Etchers and Engravers held on Thursday, Sir Aston Webb, P.R.A., Mr. Campbell Dodgson, and M. Alexandre Theophile Steinlen were elected Honorary Fellows of the Society, and Messrs. E. Blampied and Noel Rooke, Miss Hester Froud, Mrs. Raverat, Miss K. Cameron, Messrs. E. H. Whydale, and R. R. Gill, and Miss M. Campbell were elected Associates.

PROFESSIONAL AND TRADE SOCIETIES.

BIRMINGHAM BUILDERS' TRADER EMPLOYMENT ASSOCIATION.—At the annual meeting on Monday last, Mr. W. Harvey Gibbs (the retiring President in the chair) blamed the Birmingham Housing Committee for the delay in housing. He said they started communicating and negotiating with the committee as far back as last April, and up to the end of September they had not come to any definite arrangement with the committee. Since then an agreed schedule had been priced in and drawn up, under which the members of that Association had collectively agreed to build 1,500 houses during the ensuing twelve months. Although they, as builders, had been called over the coals by the Housing Committee—more particularly by the chairman—and by the Press, he thought it should go forth that the fault had not been on the builders' side. They laid a scheme before the Housing Committee, early, but it was turned down, and they heard nothing more from them for a long time. Now the committee had come along, and adopted practically the scheme placed before them eight or nine months ago. As regarded the future, he thought there were great prospects. There was every tendency for the creation of a vast amount of business for a number of years, and he felt convinced that, if labour and capital would only settle down and work together, there was a great future, not only for their industry, but for the country. Mr. Guy Sapcote was elected president for the year, Mr. E. Teall, vice-president, and Mr. S. F. Swift, junior vice-president.

EDINBURGH ARCHITECTURAL ASSOCIATION.—At a meeting of the Edinburgh Architectural Association, held on January 7 at 117, George Street, a paper, "The Giving and the Getting—An Apprenticeship," was given by Mr. Sydney H. Miller. The lecturer's purpose was to give the necessary incentive to students apprenticed to architecture so that they might take full advantage of all the opportunities that architecture offered. It was only after their five years' apprenticeship, Mr. Miller pointed out, that many apprentices realised what they had missed during that period. After indicating some erroneous ideas held by the general public as to the scope of an architect's duties, he outlined the existing facilities for training, and observed that over and above the latter the student lived in a city that was wealthier than the majority in architectural subjects which he should study.

SCOTTISH ECCLESIOLOGICAL SOCIETY.—The Society met last Saturday in St. Cuthbert's Hall, Edinburgh, when Rev. J. Arnott Hamilton, B.D., delivered a lecture on "The Ruined City of Mistra, near Sparta, and its Byzantine Churches." This ruined mediæval city, the lecturer said, was situated on a detached hill 2,000 feet in height overlooking the Lacedæmonian Plain. The modern town of Sparta and the site of ancient Sparta were about three miles distant. The situation was of great beauty, and the town itself was one of the most remarkable ruined cities in Europe. Its remains dated from many different epochs. The fortress on the summit was erected in 1248 by William Villehardouin, French Prince of Achaia. On a lower level extend the ruins of Byzantine days, including the Palace of the Despots. Further down Turkish remains and the modern Greek village were to be seen. Mistra's most notable feature was a series of Byzantine churches of the fourteenth and fifteenth centuries, of much architectural interest and charm. In the later days of the Byzantine Empire Mistra was a place of great importance, and the second son of the Emperor resided there. The churches were the outcome of an ecclesiastical revival of those centuries, and were valuable examples of Byzantine architecture. Their chief feature was one or more cupolas resting on a polygonal drum. Some of the churches betrayed Western influence. The walls of three were covered with a series of exquisite frescoes, the best of which had been said to be comparable to those of Giotto. The lecture was illustrated by a large number of lantern views.

Our Office Table.

Spon's "Architects' and Builders' Pocket Price Book" for 1920, edited by Mr. Clyde Young, F.R.I.B.A. (London, E. and D. Spon, Ltd., 6s.), has reached its forty-sixth edition. It covers nearly 300 pages, and is so compactly produced that it will easily slip into the coat pocket; and an excellent index renders instant reference easy.

According to a recent patent by Messrs. Harland and Wolff, and Mark A. Knock, both of Belfast, a concrete is made from a mixture of, for example, two parts of Portland cement and one part of sawdust, made damp with a solution of sodium silicate, and then wetted by adding calcium chloride solution in such quantity as to leave a small amount of sodium silicate in excess. Hydrochloric or other easily ionised acid may be used in place of calcium chloride; but, in this case, the cement should contain free lime, or lime should be added as a filler. The surface of such a mixture, when spread, may be waterproofed by coating with a similar mixture having a lower proportion of sawdust, or hardened by treatment with a solution of silica in hydrofluoric acid or by treatment with dilute hydrofluoric acid. According to the Provisional Specification, concretes containing light porous aggregate, such as sawdust or cork, are made by forming an insoluble waterproof binding medium in the pores of the aggregate by treating the latter with sodium silicate and then with a solution of a suitable salt or acid.

In these days of scarcity of timber for pit equipment, illustrated particulars of a reinforced concrete pit headgear just erected at the Mary Pit of the Fife Coal Company at Lochore, Fifeshire, given in the last issue of the *Engineer*, should interest. It is the first reinforced concrete headframe to be erected in Scotland. The whole structure was specially designed to give great stability. The foundations, which were carried down to a depth of 11 ft. below ground level, are 109 ft. long and 41 ft. wide, and consist of a series of massive longitudinal and cross beams supporting the various vertical and inclined members. The shaft tower foundation consists of a raft 41 ft. square and 4 ft. thick, which in turn supports a smaller raft 30 ft. square and 7 ft. 6 in. thick. This form of foundation was adopted in order to distribute the load on the shaft tower evenly over the ground, at as great a distance away from the shaft as possible, and so to minimise the tendency for the earth below to squeeze out when the shaft was sunk. The four main columns round the pit shaft spring from this raft, and rise 89 ft. to the level of the pulley platform, from which there is a further vertical extension of 25 ft. This latter construction is arranged to enable the rope pulleys to be erected or lifted from their bearings for repairs, etc. The whole of the construction is of reinforced concrete on the Kahn system, and was designed by the Trussed Concrete Steel Company.

"Lockwood's Builders' and Contractors' Price Book for 1920" (London: Crosby Lockwood and Son, 7, Stationers' Hall Court, E.C.4, 4s.) well maintains its old reputation for reliability of reference and prompt issue. The pregnant paragraphs in the preface well describe the present impasse in housing, and the absurdity of some of those concerned who are receiving double the wages they got in pre-war days expecting to be housed at pre-war rates is well pointed out. Several new features are included, and the prices throughout are as accurate as it is possible to make them under the present abnormal conditions.

Mr. Charles, K.C., chancellor of the diocese of Hereford, in a considered judgment on a question whether it was legal to erect a war shrine in Tenbury Church, has stated that a crucifix isolated, without incident or adjunct, was, of itself, unlawful as an architectural decoration in or upon a church. He referred to the judgment of Lord Penzance in *Ridsdale v. Clifton* (46 L.J., P.C., 39), where he

said:—"The remark naturally arises that the particular figure of the crucifix, while it may justly be said to stand highest among the representations of Gospel history in its fitness for the purpose of adoration or worship, must surely be admitted to occupy a very inferior place among the subjects adapted for the display of mere architectural beauty. In association with other figures and as embodying the scene of the Crucifixion, it has no doubt been the subject of artistic treatment, but by itself, as it appears here in this church, standing alone without incidents or adjuncts, it is a subject which, however artistically treated, might be so well spared in the mere decoration of churches that it is not easy to conceive that it should be selected solely for that purpose." The chancellor came to the conclusion that the isolated crucifix was not proved to be one erected merely as an architectural decoration, and that if it were erected there was reason to suppose that it would be treated with superstitious reverence. He therefore declined to grant the faculty.

The report of the Workers' Homes Board of Western Australia states that the board has provided 1,535 homes without cost to the taxpayer, while a substantial balance has accrued to the credit of the fund. The board buys, builds, or completes the building of houses on either freehold or leasehold land for applicants. Each applicant pays a deposit of not less than £5, and, after obtaining possession, makes a fortnightly contribution which covers interest, redemption of principal, rates, insurance, etc., and which comprises the whole of his financial responsibilities except that of keeping the property in repair. The State lends funds at 5½ per cent. to the board, which acts as its own builder and contractor.

The net profits of the London County Westminster and Parr's Bank, Ltd., for the past year, after providing for bad and doubtful debts and all expenses, amount to £2,455,007. This sum, added to £377,560 brought forward from 1918, leaves available the sum of £2,832,567. The dividend of 10 per cent. paid in August last absorbs £494,969. A further dividend of 10 per cent. is now declared in respect of the £20 shares, and the maximum dividend at the rate of 12½ per cent. per annum on the new £1 shares will be paid. £1,000,000 has been set aside for investment depreciation, £100,000 transferred to the bank's war memorial fund, in accordance with the resolution at the general meeting on January 30, 1919, £100,000 transferred to premises account, and £165,721 to reserve, bringing the reserve up to £8,750,000, leaving a balance of £414,225 to be carried forward.

Mr. Frank Brangwyn has been appointed an honorary member of the Brussels Academy of Fine Arts.

The Ministry of Health has sanctioned a loan for £139,000 for a new gasworks at Blackburn. The corporation is also erecting a new electricity station costing £250,000.

Owing to the scarcity of wood and to the greater durability of concrete, most kitchen and scullery floors are being planned for concrete surfacings. The concrete is made 4 in. thick, and to prevent settlement cracks should have embedded in the lower part strands of barbed wire or hoop-iron, placed both ways at distances of 9 in. and 12 in. The concrete is mixed 6, 3, 1, and then faced with 1 in. of waterproofed cement concrete, mixed 2 and 1 with 3 lbs. of "Pudlo" to 100 lbs. of cement. Such a floor is not only economical, but it is very dry, and effectually excludes all rising dampness.

The Housing Committee of Wolverhampton Corporation recommended on Monday that application be made to the Ministry of Health for sanction to borrowing of amounts in respect of the erection of houses, viz.:—Birches Barn estate: Messrs. T. and S. Ham, £9,785, twelve houses; Messrs. Amies and Sharratt, £14,682, eighteen houses; Messrs. Tarmac, Ltd., £14,400, twenty houses. Barnhurst site: Mr. W. Roe, £22,964, twenty-four houses. Parkfield Road site: Mr. A. Powell, £3,000, four houses, and £1,494, two houses; Messrs. Henry Gough and Sons, £10,689, fourteen houses. The amounts total £77,014 for ninety-four houses.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House.

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Strand, W.C.2

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OUR ILLUSTRATIONS.

The Bush House, International Sales Building, Aldwych, London. The Strand Façade and Front facing Kingsway. Views from the Architects' Model. Messrs. Helmle and Corbett, of New York, Architects.

Memorial Cross at Lutton, Lincolnshire. Lieut-Col. J. E. Dixon-Spain, F.R.I.B.A., Architect.

Workmen's Cottages, King's Norton. Housing Experiment by the Birmingham Daily Mail Building Scheme. View of the first pair, with plans.

Currente Calamo.

There seems a probability that the movements at Manchester and Birkenhead in favour of the taking up of contracts to build by associations of the workmen themselves may spread. In both the towns mentioned the suggestion is that a number of substantial workmen should form themselves into a company or co-operating body and undertake as contractors the erection of a certain number of houses under the same conditions and regulations as ordinary contractors, and, of course, making a profit according to the efficiency and economy of their operations. This profit the workmen-builders would divide in agreed proportions. We hear that the building operatives in London are taking up the idea; that meetings are now being held by various trades in different parts of London, and shortly there is to be a central meeting at which a general scheme for London will be discussed. From another source we hear that an alternative scheme is maturing for the formation of a "National Building Guild," which will probably include the whole of the building trade unions interested as shareholders to take over existing builders' businesses where the owners are willing, and to give debentures for the capital value of the businesses, on which, of course, interest would be paid. Comment, till more details are forthcoming, would be premature; but possibly the advisers of local authorities—and, indeed, any other building owners likely to be asked to enter into contracts with workmen-builders—will not find it too soon to consider very seriously possible contingencies which are not unlikely to present themselves.

"The Increase of Rent, etc. (Amendment) Act, 1919," which is its title, came into force upon its passing on December 23, 1919, and must be kept distinct from the Act of April 2 in the same year, which it amends. The new Act adds another bit to the mosaic of legislation upon this head, and makes the whole series more like a jig-saw puzzle than ever. Broadly speaking, this last Statute increases the judicial discretion of the Courts upon the hearing of landlords' and tenants' applications for and against ejectment.

It provides that where an order has been already made but not executed, the Court may at any subsequent time re-open the matter to revise or rescind that order, or impose fresh conditions. It goes further, and by one novel and curious clause declares that when an order has been made but not executed, and, in the opinion of the Court, such order would not have been made had this last Act then been in force, the judge may, on the tenant's application, revise the order for the purpose of giving effect to the new Act. In the section dealing with the cases in which an order for ejectment may be made, a fresh ground is given for the exercise of judicial discretion, which is of much importance. This arises where "the tenant, by sub-letting the dwelling-house, or any part thereof, or by taking in lodgers, is making a profit which, having regard to the rent paid by the tenant, is unreasonable, and the Court considers it reasonable to make an order." This clause will give landlords a chance of hitting back against profiteering by tenants. These are the main points in the latest Increase of Rent Act, which will, we think, give rise to some little litigation although it seems to have been passed to help the judges in clearing up part of the muddle the others have made.

Some time since the Greenwich Borough Council arranged for the conversion of thirty or forty large houses into flats for working-class accommodation. At the outset the council had, the *Estates Gazette* says, their own plans prepared, but these were dropped after consultation with the Ministry of Health, under whose instructions new plans were prepared by experts and the scheme entrusted to the Office of Works. Three of the houses are now approaching completion, and they have just been inspected by Mr. Annis, the medical officer of health for Greenwich, who finds that in every instance the places must be condemned as unfit for human habitation! Bedrooms have been placed with their ceilings level with the adjoining ground surface, and there has been such a strenuous endeavour to save space that houses which were to be converted into two flats have been converted into four, with the result that bedrooms in the attic have an average height of only 5 ft. 3 ins., in face of the fact that the Build-

ing Act requires that such rooms should have an average height of 8 ft. In short, the medical officer, referring to one of the houses, states that he "does not know of any worse constructed tenement in the whole of the borough," which is assuredly strong condemnation when we bear in mind the very indifferent structural arrangements in the poorer parts of the riverside borough. The Housing Committee of the Greenwich Council has declined to take over the new flats until the Ministry of Health has carried out the work previously recommended by the council. Surely some explanation is desirable.

Judge Harington, at Guildford County Court, last Friday, gave an important decision on the legality of "key money." The action was brought by a London solicitor, who let a house to the widow of a soldier. He sued her for £3 arrears of rent; but the defence was that she had paid £3 as "key money," and was entitled to deduct that from the rent owing. Mr. T. Parkinson, the plaintiff's agent, contended that the £3 was a personal present to him for letting her have the premises. Mr. J. H. Harris, for the defendant, read a list of "presents," which witness admitted. The total was £23, and he did not tell his employer until this case arose. The tenants had paid 6d. a week excess rent with his employer's knowledge, but on November 3 the rents were reduced from 8s. 6d. to 8s., the standard rent. Mrs. Oldham gave evidence that it was not a present that Mr. Parkinson demanded before accepting her as tenant of the whole house, she having previously been a sub-tenant of Mrs. Chatterton, who left. He threatened to turn her out if she made any fuss.—The Judge said the rent was not in arrears, as the defendant had been charged in excess of the standard rent a sum which more than covered the alleged arrears. It was clearly a payment for possession of the key, and the claim could not succeed. The judge granted defendant costs on the B scale, on the ground that the question was of interest to a great number of persons throughout the country.

We are glad to know that the last large building site in Aldwych (facing

the island site of the Bush Company and Australia House) has been secured for British industry, the offer made by Agricultural and General Engineers, Ltd., having been accepted by the London County Council. The site has a frontage on Aldwych of about 213 ft. and an approximate area of 30,000 ft. The board of the Agricultural and General Engineers, Ltd.—with which company are associated Messrs. Aveling and Porter, Ltd.; Barford and Perkins, Ltd.; E. H. Bentall and Co., Ltd.; Blackstone and Co., Ltd.; Chas. Burrell and Sons, Ltd.; Richard Garrett and Sons, Ltd.; J. and F. Howard, Ltd.; and others—have decided to erect commodious office and showroom accommodation on the position. The architects are Messrs. Josiah Gunton and W. H. Gunton, of Finsbury House, E.C.

The return of Dr. F. H. Jacob, a well-known local medical man, as a member of the Nottingham City Council on Monday, by nearly double the vote of the Labour candidate's, is or should be an encouraging endorsement of our appeals of late to men of standing and knowledge to take up the duties of citizenship irrespective of party considerations. Dr. Jacob stood as a purely Independent candidate. The principal ground urged for his return was his unrivalled expert knowledge of many of the questions affecting the health of the city, and the action of the two political parties in endorsing his candidature was a recognition of the need for men of Dr. Jacob's calibre on the Council—a recognition which the result of the poll has ratified.

PRIZE STUDENTS' DRAWINGS AT THE R.I.B.A.

Last Wednesday the Exhibition of Prize Medal and other drawings for 1920 was opened to the public in the Institute Galleries, Conduit Street, the awards for the year having been announced on Monday. The standard of the work shown is distinctly above the average, though the total is smaller than in the exhibitions before the war. Since 1914 these students' competitions have been suspended.

SOANE MEDALLION, WITH £150.

For this premier prize there are but two entries. The subject is a bridge commemorating the great war. The author of the chosen scheme, marked "Victoria Ardificatrix," is Mr. Arthur Gordon Shoosmith, and there can be no question as to the merit of his design, which shows a stone bridge of five arches symbolic of the period of the war, and at its end is an arch of victory, having a graceful colonnade leading on to a grande place, with monumental obelisks right and left, with a centrally placed Hall of Peace, supported as a composition on both flanks by octagonal pavilions. The names of the chief engagements by sea and on land figure on the spandrels of the rusticated bridge masonry above the bold bastions, massively detailed in an architectural manner picturesquely handled. Above the parapet a covered footway is divided by squat tower pylons over the bridge piers which nicely break the skyline, and towards the bridge road a continuous row of coupled columns enclose the footway. The drawings of this set are excellent.

The second design, marked "City Centre," has been awarded Honourable

Mention to Mr. G. A. Rose. This proposal is more ambitious, with an extensive open square surrounded by public offices in several blocks, disposed to the east and west. A florid City Hall is placed in a line with the bridge, and it has six internal courts, the council chamber extending to the rear behind the big assembly hall, which is cruciform on plan. Segmental arches of differing spans are employed for the bridge, which has curved pavilion approaches formed by a colonnade leading to covered footways. An isometric bird's-eye shows the embankment and general lay-out, which has been carried through with a vast amount of patient industry. The detail drawing exhibits attenuated columns of the Corinthian order, and the yellow tinting of the elevations rather detracts from the effectiveness of the somewhat commonplace architecture.

TITE PRIZE AND £45.

Ten competitors submitted designs for the Italian Loggia with a library over, and the choice has been ably justified by "Stucco," Mr. P. H. Meldrum, whose proposal is the most capable of the series. It consists of a park pavilion, with an arcade of five arches without label mouldings, the plastered facing throughout covering the constructive voussours, the façade being commendably broad and designed in one face, the approaches to the library being at both terminations. The roof, of flattish pitch, is covered with corrugated red tiles. The cloister has circular niches at the rear monumentally arranged. The library would be sparsely lit, as the fenestration of mullioned lights is insufficient, though these small windows much enhance the dignified picturesqueness of this frontispiece. The water-colour sketch is excellent, and the elevations are capitally tinted.

"EXVL in a circle," by Mr. V. O. Rees, is awarded the Certificate of Merit. The plan is overweighted by very large stairways and vestibules, much too big for their purpose of approach to the small library, which is lighted from the roof as well as with windows on both sides. The detail is florid, the elevations being much better than the perspective. "Eureka" has its staircases in the library, which would be draughty and disturbed by so faulty an arrangement. The scheme has a formal garden in front, with water pools behind a terraced treatment attractively set out in the perspective. The design marked by a mask device suffers from its red-hot colouring, but the author is dexterous with his brush and displays knowledge of detail and good taste. The library approaches are too cramped, and the garden planning is over-fanciful. "Venus" is bold in manner, detailed carefully, but drawn weakly in thin pencil lines.

OWEN JONES PRIZE, WITH £150.

Mr. G. F. Quarmby is the only competitor, and his work is set out on six big strainers of efficient colour studies, including part of La Primavera, by Botticelli, from Florence, a printed cretonne by William Morris, and some good scale drawings of the Pantheon, details of decoration at Paris, also some Nature studies and mosaic patterns. These taken together left the judges no alternative but to award the author this prize.

PUGIN STUDENTSHIP, SILVER MEDAL, AND £40.

Mr. H. St. John Harrison wins this distinction with an extremely well-drawn set of ecclesiastical and mediæval examples of English work quite equal to any

sketches done during the Gothic Revival. His studies include a big detail of Southwell tower, some Northamptonshire churches, the lantern at Ely, and the spire of St. Michael's, Coventry, drawn gracefully in pencil. Mr. G. Holt sends a good set of Elgin Chapter House, and wins a certificate.

THE INSTITUTE SILVER MEDAL FOR MEASURED DRAWINGS AND £10 10s.

The splendid set of elevations and plan of St. Paul's Cathedral, submitted under the motto of "Iris" is by Mr. Arthur P. E. Poley. The west front and dome are the chief subjects. We have never seen Grinling Gibbon's beautiful carvings more exquisitely drawn, or this prize more deservedly won.

"Sapper" is the nom-de-plume attached to a set illustrating the Royal Hospital at Chelsea.

THE GRISSELL GOLD MEDAL AND £10 10s.

A water tower in concrete to hold 50,000 gallons is the subject set for this constructional prize. Five designs were submitted. The best scheme is that marked "Concrete," the author being Mr. F. H. Heaven, who has made his erection circular on plan, very ably worked out.

FIXED FEE CONTRACTS.

A novel, and in some respects an ingenious type of cost plus contract is described by Mr. Beatty, a member of a firm of American engineers, who says it has been tested on a half-million-dollar contract for the Southern Power Company.

An estimate of cost on the proposed work is prepared, using the estimated various quantities of earth and rock excavation, concrete to be placed and similar items as furnished by the engineer. Based on the estimated cost arrived at in this way, a fee of 20 per cent., or 200,000 dollars on a 1,000,000 dollars contract is named as the contractor's fee for supervising the work and furnishing all heavy plant, with the understanding that part of this sum will be credited to the owner on the completion of the work. When the contract has been carried out the actual cost of the estimated quantities is determined by applying the actual unit costs to them. Ten per cent. of this sum then reverts to the owner, leaving the contractor a net fee of approximately 10 per cent., provided the estimated cost of the work was close to the actual cost. Provision is made that the various quantities may be increased by 10 per cent. without any additional compensation to the contractor, but the refund to the owner in all cases is based on the original estimate of quantities. A straight fee of 10 per cent. is paid on the overrun, if there is any, beyond the increase in quantities provided for otherwise.

Or a million dollar contract, then, if the estimated cost was exactly correct, 100,000 dollars of the tentative fee of 200,000 dollars would be returned, leaving just 10 per cent. for the contractor. If the actual cost of the work covered by the estimate amounted to 1,200,000 dollars, then the refund would be 120,000 dollars, which would reduce the contractor's fee to 80,000 dollars. Conversely, should the work be performed for 800,000 dollars, the contractor would retain 120,000 dollars. In the former case his fee would be only 6.23 per cent. of the cost, while in the latter he would receive 15 per cent.

While this plan is in effect a fixed fee proposition, with a bonus and penalty clause, in actual practice it offers a very simple way of expressing the agreement as to the fee to be paid for the work. It is to be 20 per cent. of the estimated cost agreed upon in advance, less 10 per cent.

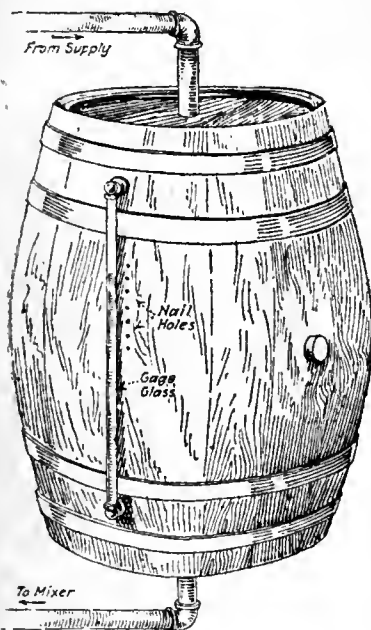
of the cost of the work, be it one thousand or one million dollars.

The greatest value of this type of contract has been found to be its effect upon the attitude of the workmen and even of the contractor himself. From the very start, the contractor's men can very easily understand that for every ten dollars spent on the work one dollar comes from the contractor's pocket, and that for every ten dollars saved there is a profit of one-tenth that amount. While the same condition is met on bonus-and-penalty types of cost-plus contracts, the contractor's direct interest in keeping down costs is not always so apparent to the men in his organisation.

In conclusion, Mr. Beatty says: "The plan actually means that from the time when the work starts we are paying 10 per cent. of the cost, which comes off our fee. We find that on this basis our men work just as faithfully as on a straight lump sum contract."

GAUGE GLASS ON BARREL MEASURES WATER FOR CONCRETE.

A barrel fitted with a gauge glass, and having a dozen gimlet holes into which to insert a marking nail, provides a water-measuring outfit for a concrete mixer. The device has been found both accurate and flexible in use on the concrete-road con-



Barrel with gauge glass measures water for concrete.

struction of the Embankment Co., near Grant Park, Ill. In operation, states *Engineering News-Record*, the barrel is filled until the water in the gauge shows opposite the marking nail. The barrel is filled and emptied for each batch.

One of Kettering's oldest and best known tradesmen passed away on Sunday week in the person of Mr. John Noble Cooper, painter and decorator, of London Road, within a few days of attaining his 71st year. For nearly 40 years he had been a sidesman at St. Andrew's church, and had on several occasions been appointed churchwarden.

The only inscription on the reconstructed Cenotaph will be "To Our Glorious Dead." The Cabinet decided, quite rightly we think, that, as the Cenotaph is to be a monument to men of various creeds and denominations who died for this country and were buried elsewhere, a purely Christian inscription would be out of place. The memorial will be an exact reproduction, in durable form, of the existing structure. The flags will be of carved stone with colour driven through by a new process. The wreaths will be of a green stone, which is being brought specially from South Africa.

Our Illustrations.

BUSH HOUSE INTERNATIONAL SALES BUILDING.

The purpose of this group of buildings is the creation of a central market-place for manufactured goods, being, in fact, an extension of the exchange idea already exemplified in the Stock Exchange, the Baltic, and the Produce Exchanges, which centralise the various functions in these commodities and services. The exchange or market-place for manufactured goods is not so well known in this country, but for many years the Germans have applied it most successfully, as is shown by the success of the Leipzig, Hamburg and Nurnberg Fairs, or Musterlager. Mr. Bush developed the idea along somewhat different lines, beginning with his Terminal in Brooklyn, New York, which provides handling and transport facilities for a large number of manufactures on a co-operative scale. This plant covers 200 acres and employs 30,000 hands, and has been in successful operation for the last twenty-five years. Following this, Mr. Bush instituted in New York his International Sales Building, which is a logical development of the co-operative idea embodied in the Terminal, and provides selling facilities for a large number of manufactures under the one roof on a co-operative basis. This plant has been in operation for less than one year, but has already proved the value of its underlying principles. The London enterprise of the Bush Terminal Company is an extension of this class of business to what Mr. Bush considers the greatest market-place in the world. The heart of the scheme will be the central building in the group, which will contain a reception hall, a buyers' club and restaurant, exhibition space, and an auditorium capable of seating 600 people. Behind all this will be the actual business organisation of the Bush Company, providing many business facilities to the tenants of this central building, at a cost which they could not possibly afford if they handled it on a basis in outside and scattered premises. From this central building the activities of the company will develop into the outside wings. The chief value of this method of handling business has been found to lie with the luxury trades—i.e., those which turn out articles of luxury, design or quality, and of such a size and nature that they can be handled and require to be handled and seen before their value to the buyer can be appraised. The special appeal of the London building will be to the colonial and foreign buyers who flock to London in thousands each year, looking for the novelties and necessities to satisfy the growing demands caused by the rising scale of civilisation in the many dependencies and colonies of the British Empire.

WORKMEN'S COTTAGES, KING'S NORTON HOUSING EXPERIMENT, "BIRMINGHAM DAILY MAIL" BUILDING SCHEME.

The proprietor of the *Birmingham Mail* has made a practical demonstration of rapid house building at King's Norton, a suburb of the city. Three pairs of houses are being built as an object lesson of what can be achieved when there is a "will to do things," unhampered by the red tape and routine of Government departments and local authorities. Plans were adopted on November 7, and the contract commenced on November 10; the first bricks were laid next morning; all the footings

were completed by November 14, and substantial progress made with the shell of the first pair of dwellings. The weather was very unfavourable, but the six houses were finished and ready for occupation in record time. The houses are in pairs on a site fronting the Pershore Road, King's Norton. Each pair of houses are 12 ft. apart, and the building line is set back 30 ft. There is room for at least three more houses facing Pershore Road to the corner of Camp Lane. The ground plan consists of a square hall, 8 ft. by 13 ft. 3 ins., the staircase being on the outer side, leaving a passage of 5 ft. to the entrance to the back hall, which is 3 ft. wide and gives access to the living-room, scullery, and pantry. There will be space in the front hall for gram and bicycles, etc. The parlour is 13 ft. 3 ins. by 12 ft., with bay window, 7 ft. by 2 ft. The living-room, 16 ft. 3 ins. by 12 ft., with a French window, 7 ft. wide and 8 ft. high, opening on to the back garden. The scullery is 9 ft. 3 ins. by 8 ft., and has a side entrance in the passage and two windows. A coal cellar is located between the pantry and the scullery, with access from the latter so as to save going outdoors for the fuel. Coal deliveries can be made to the cellar by a small door opening into the passage. A pantry, fitted with a settle and shelves, is partly over the coal cellar. This is gained by lowering the level of the coal cellar 2 ft. and restricting the height to 5 ft. 6 ins. above the ground floor, the available space overhead being divided, for shelves and cupboard room. Provision is made for a gas furnace and a gas cooker.

Each house will be centrally heated by corner fireplaces for gas fires. There is a front bedroom, 13 ft. 3 ins. by 12 ft.; a large back bedroom, 16 ft. 3 ins. by 12 ft.; and a small front bedroom, 9 ft. 3 ins. by 8 ft. The bathroom adjoins, fitted with bath, wash basin and w.c., and drying cupboard. Both ground and first floor rooms will be 8 ft. 6 ins. in height.

MEMORIAL CROSS, LUTTON, LINCOLNSHIRE.

This war memorial, in Portland stone, is 14 ft. high. It will be erected at Lutton, in Lincolnshire. The architect is Lieut.-Colonel J. E. Dixon-Spain, of Hanover Square, London, W. The drawing given to-day was shown at the Royal Academy Exhibition of War Memorials last autumn.

OBITUARY.

The death is announced of Mr. Alfred Parsons, R.A., P.R.W.S., the distinguished artist, on January 16, at his house at Broadway, Worcestershire. By his wish, the public announcement was withheld till the day after the cremation. He was seventy-two years of age, having been born at Beckington, Somerset, on December 2, 1847. His loss will be severely felt by the Royal Society of Painters in Water Colours, his predecessor in the presidential chair, Sir Ernest Waterlow, having only recently passed away. Mr. Parsons was educated at private schools, subsequently working for a time as a clerk in the Savings Bank Department of the Post Office. He first exhibited at the Royal Academy in 1871, and in 1887 his "When Nature Painted all Things Gay" was purchased by the Chantry Trustees. In 1897 he was elected an Associate of the Academy and an Academician in 1911. He travelled and painted in Japan, and went with F. D. Millet down the Danube from the Black Forest to the Black Sea. His feeling for design and light made his best work most attractive. His garden scenes especially were favourites with all, and personally, he won the regard of all who knew him.

A series of afternoon addresses will be commenced at Sion College on Tuesday, February 10, when Mr. Philip Norman will lecture on "The Mediaeval Church in London."

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A general meeting of the R.I.B.A. was held on Monday at No. 9, Conduit Street, W., Mr. Guy Dawber presiding.

The minutes of the last meeting having been confirmed and signed, the announcement was made of the death of Mr. Henry Denison Walton, a Licentiate elected in 1911, and a vote of condolence with the relatives was passed, all standing.

The Chairman then called on Mr. Halsey Ricardo to read a paper on

CITIZENSHIP.

Mr. Ricardo said that architects were pre-eminently civic missionaries. It was well for them to take stock of their propaganda work occasionally, and the present moment seemed especially propitious for such stocktaking, since so many theories, formulæ and principles were going to be, or were being, tested from fresh angles of vision and by new criteria as to their tendency. One supremely important point of view that had come to the front was on the constitution of the State and the position of the individual in regard to it. Thanks to the war, we had come to think more of our collective duties and to feel that each individual was no more and no less than a contributory cell in the structure of the commonwealth. At this moment there was an ideal, almost world-wide, which all the nations were girding themselves towards, and which involved the sympathetic co-operation of every individual to do his utmost for the general welfare. The question that presented itself to most citizens was: What can I do, and will any single effort of mine be worth the pains it will cost me? That there should be such questions was a sad verdict on our systems of education. The first thing to do was to teach our youth how much there was to be proud of, and to do this effectively we must ourselves realise the value of the possessions we had inherited. As far as poetry, literature and science were concerned, architects could co-operate according to their ability, but in the matter of arts and handicraft it was urgently incumbent upon them to see that the education given was well directed. If the citizen was to be proud of his city he must know why. First, he should know something of the disposition of the city he inhabited. If that city was London, he should have a clear knowledge of the course of the Thames through the city, say from Woolwich up to Teddington. He should know how many bridges crossed it on the way, what was their direction, and what their main function. He should know the principal arteries of traffic and the main objects of historical interest. In every London Board school of the elementary class there should be a large map showing these features, and boys and girls should be taught to read this map, and to pass a pretty stiff examination in it before leaving school. Then the powers of observation needed quickening; a good school test would be to ask each child what was in the shops he passed on his way to school, especially what was on the fishmongers', greengrocers', fruiterers' and florists' stalls. He should be able to distinguish by a passing glance between a crayfish and a lobster, a quince and a pear; and from such stepping stones as these he might get on to observe the terrible disorder in our streets and to wonder whether such litter was inevitable. Really it was not. (Hear, hear.) We had allowed it to become prevalent out of sheer laziness; no one would permit such dirt and disorder inside his own house.

Mr. Ricardo illustrated this point with an experience of his own. He had urged on the omnibus company to have a box at the foot of the omnibus steps into which passengers at exit could drop their tickets. The company had fitted a number of such boxes, but afterwards gave them up because the public ignored them. He continued: "I maintain that the experiment was not tried resolutely enough, not persisted in sufficiently until the public had grasped the intention and familiarised itself with its object. The need for education in civic decency is great, as this example shows. Disorder on a larger scale is to be seen in our street buildings. Look down

Holborn or up Oxford Street, stand at Oxford Circus and view the prospect with a fresh, unbiassed eye. Give a glance down Regent Street as well. To us architects, who are accustomed to note and criticise, such a survey appears lamentable. I am not holding a brief for the strict uniformity that one gets in residential quarters such as Gower Street, but I think you will agree with me that the welter, east, south and west, is not decent. Some years ago the London County Council, conscious of the discordant result of individual architectural display, tried to formulate a scheme for the buildings on either side of Kingsway. Individualism wrecked it. It may be that uniformity was there carried to the breaking point, and in the absence of any civic pride the financial aspect was allowed to settle the matter. Even Mr. Norman Shaw's scheme for the Quadrant and Piccadilly has been defeated, because there was no public opinion strong enough to override individual interests. It is this public opinion that we must educate, strengthen and spur to action. Without it we are helpless and impotent."

Of the ideal, the lecturer said that it must be lofty, but to be reached by easy steps. An aphorism of William Morris's, "Have nothing in your house that you do not know to be useful or believe to be beautiful," went to the root of things. We must set our face against the accumulation of rubbish, its purchase and manufacture. What a wholesale gaol delivery this would mean! Behind the article stood the man who produced it; we should consider what his toil meant to him, and ensure as far as possible that such work should be a pleasure and not a weariness. Apart from the producer's side of the question there was the home side; if all our houses were cleared of the rubbish within their walls the mere saving in the labour of dusting and cleaning would be enormous.

Coming again to the question of the pride in one's city, the lecturer said it was idle to call upon the citizens to take pride in their city if we were not agreed as to what should justify that emotion. We could not teach our children if we were without conviction ourselves. But such negative attitude was wantonly preposterous. A city like London, of unparalleled size and magnificence—the scene of so much history, so much emotion, so much piety—not to be proud of it! It could only be in the plenitude of his ignorance that a man failed to be stirred by this wonderful mass of masonry and humanity. The more we knew of the cities we dwelt in—of the events that had taken place there, the hopes and fears and sorrows they had enshrined—the more sacred they became to us. We should not be faint-hearted citizens, apologetic for the places we lived in, but stout-hearted, recognising their real worth and magnificence, and determined that they should support our claims for their worth without fear and without reproach. (Applause.)

Mr. Stanley Peach moved a vote of thanks to the lecturer. In doing so he said that citizenship was a religious question, which concerned them equally as architects and as men. The reception accorded to the paper was one among many instances noticeable at the present time of a new attitude of mind and the diffusion of a new philosophy stirring mankind to-day. That philosophy might be summed up in a sentence: "Run religion on businesslike practices and business on a religious basis." Their civic duty was to incarnate the principles of this new philosophy in action by association, unity and co-operation for the object for which the Institute was founded. Unity was sound architecture, religion and business; and it was only by unity, the disciplined thought of many minds centering on a common definite objective, that they could direct their efforts on the missionary work which Mr. Ricardo had pointed out as one of the duties of the architect. Architecture and citizenship, like science and art, were two wings by which to fly. Separate one from the other and we had only one wing; we might flop but we should never reach our ideals. As architects and citizens, men of science and imagination, their faith was in architecture as an instrument and servant in the progress of mankind. Men in

association were an application of the principle of a central station in which many engines acting and synchronising could generate a current of general utility. The individual engine could do no more than provide luxury for a few, and one engine unsynchronised and acting alone could short-circuit the whole station and break down the public supply. Hence association in citizenship was the first duty of architects. (Hear, hear.) There was a citizenship for a man's self which was often confounded with self-interest, although it had nothing in common therewith. It conferred personal benefit, because the good of the individual could only arise from the well-being economically and ethically of the whole community, but such a citizenship had no element of self-seeking. It was based on public spirit.

Professor Lethaby said the idea that something should be done to teach observation to children in elementary schools was a very deep one. To-day we were not taught observation; we were taught to read print, and observation through other faculties, especially by the eye, had lapsed into great disuse. He remembered William Morris saying thirty years ago that he was sure that people's eyes would drop out through disuse like those of the fishes at great depths of the sea. We did not notice the untidy streets that we lived in or the blank dreariness of our railway stations. London was simply frightful, a blank horror; but we took it as more or less natural, though a limited amount of travel would show us that it was not universal. He remembered coming back to London from Budapesth thirty-five years ago. He had supposed that Budapesth would be a very remote and curious place, but had found it a town with clean streets, a brilliant tramcar service, and things to eat at every corner. (Laughter.) Coming back to London he had felt that we were not in the forefront of civilisation. He would fain be proud of his country; there were certain phases of which he was proud, but others of which he was not. (Applause.)

Major Harry Barnes, M.P., said there could be no great architecture without great citizenship, and no great citizenship that would not produce great architecture. The city was the great sphere of the architect. When one thought of the past one thought almost entirely in terms of cities—of Damascus, Tyre, Jerusalem, and so on. Nothing had attracted Shakespeare more than that wonderful group of Italian cities, Venice, Verona, Padua, and Rome. In the great North German cities, as well as in the Italian cities, one realised what a very great connection there might be between the common pursuits of life and great architectural productions; for those places had been notable not only for their buildings, but as centres of commerce and trade. One wondered whether in the poetic imagination of the future Manchester, Sheffield, and Liverpool would remain as these other places had done in our memories. We could not have great cities or great citizenship unless we got rid of a great deal of our individualism; we could not have a great city unless we had a sense of communal life. He thought a great deal of present trouble was due to the fact that the children of the poor had been neglected. It was from that class that had come in recent times the wealthiest of our people—for there was nothing more conducive to getting money than lack of education—(laughter)—and so from this class came the architect's clients and patrons. If we took the old City of London and removed from it the buildings that stood for its corporate life in the past, what would be left? If we took away the churches, the remains of monastic buildings, such as the Temple and the Halls of the Companies, there would not be much worth visiting or seeing. He agreed with Mr. Ricardo that there was a great field for education in the observation of the contents of shops, and he thought also there was great scope in the window-dressing of shops for presenting form and colour. He (Mr. Barnes) seldom passed over Westminster Bridge without thinking of Wordsworth's sonnet, "Earth hath not anything to show more fair; This city now doth like a garment wear The beauty of the morning." He wondered if Wordsworth would have written that sonnet

if he had stood on the present Westminster Bridge and seen the gasometer rising at the back of Lambeth Palace?

Mr. Raymond Unwin said he hoped we should have a revival of the communal spirit, that the prominence of the purely national spirit would die down and allow greater prominence for the city; for one of the things we were suffering from was the amount of emphasis thrown on units which were too great to have an affectionate touch for us. We should all live a more wholesome life if we thought less of the Empire and more of the City.

The Chairman said that the paper was one full of interest and suggestion. He disagreed with Professor Lethaby that we did not notice the disorder of our cities. It was painful to every architect. Everyone who loved his city must be sick and sorry at these dismal sights, and it was not only in cities that we saw them but in our country villages also.

The vote of thanks was unanimously carried, and Mr. Ricardo briefly replied.

THE STUDENTSHIP PRIZES.

The President then called on the Secretary to read the deed of award of prizes and studentships. Calling attention to the drawings on the walls, he said that it was more than six years since the Institute had an exhibition of the sort; it was very pleasing to see them there.

The Secretary then read the announcement. From this it appeared that the Royal Institute Silver Medal and 25 guineas for Essays had been awarded to Mr. H. B. Leighton, of Sheffield. The Royal Institute Silver Medal and 25 guineas for Measured Drawings was awarded to Mr. F. A. Poley, Hampton Hill. The Soane Medallion for Design and £150 for Continental travel and study of ancient buildings abroad was awarded to Mr. Arthur Gordon Shoosmith, Westminster. The Owen Jones Travelling Studentship, Certificate, and £150 for the study of ornament and colour decoration was awarded to Mr. G. F. Quarmby. In the case of the Pugin Travelling Studentship, a Silver Medal and £60 for travel in Great Britain and Ireland and study of mediæval buildings was awarded to Mr. H. St. J. Harrison, and a Medal of Merit was awarded to Mr. G. Holt. With regard to the Tite Prize, Certificate for Design according to the Methods of Palladio, Vignola, Wren, or Chambers, and £45 for travel and study in Italy, ten designs had been submitted. The Certificate and £45 was awarded to Mr. P. H. Meldrum, Cartwright Gardens, W.C., and Honourable Mention was made of Mr. Verner Owen Rees. The Grissell Gold Medal and 10 guineas for Design and Construction was awarded to Mr. F. H. Heaven, Aberkenfig, Glam. As to the Ashpitel Prize, for the candidate who had most highly distinguished himself amongst the candidates in the final examinations of the year, books valued at £10 had been awarded to Mr. Thomas E. Ford, Peckham. Some other prizes, including the Godwin Bursary and Wimperis Bequest, were not awarded.

THE ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND.

ANNUAL GENERAL MEETING.

(Continued from page 43.)

The Council desire to express their obligations to the hon. secretaries of the various committees, who have devoted much valuable time to the heavy work entrusted to them during the year.

The Professional Practice Committee, in addition to drafting the conditions of contract already referred to, have dealt with the subject of training in professional practice, and are also considering the question of the ownership of architects' drawings and of undisclosed commissions.

The Ancient and Historic Buildings Committee have had the subject of the neglected condition of the Casino, Clontarf, again under review, and the attention of his Grace the Archbishop of Dublin, Dr. Walsh, and the Office of Public Works has been drawn to the matter. Owing to the illness of the Archbishop and to the fact that the Office of Works can only become guardian of ancient

or mediæval structures, no solution of the difficulty has so far been arrived at, but the matter is still being pursued. On a report that the site of the Weavers' Hall might be included by the Corporation in the proposed extension of the area of the Spitalfield housing scheme, a letter was written to the town clerk expressing an earnest hope that the scheme would not necessitate the demolition of this hall, which should be preserved as one of the few remaining memorials of the City Guilds. A favourable reply has been received. At the request of Mr. Joseph Pearce, architect, of Liverpool, information was obtained and transmitted to him as to the family of Sir Edward Lovat Pearce, architect of the Irish House of Parliament, who was buried in Donnybrook Churchyard on December 10, 1733.

The Examination Committee arranged and carried into effect a studentship examination, which was held on June 4, 5, and 6. One candidate presented himself for examination in all subjects, and one in the subject of design after relegation at the previous examination. As a result, Stephen S. Kelly and W. H. O'Donnell were admitted as students. Subsequently Mr. V. Kelly, B.Arch., was admitted as student, he having already passed the examination in architecture at the National University.

A valuable interim report of the Joint Committee of the Institute and the Dublin Industrial Development Association is appended to this report.

A number of architects in Cork are proposing to form a local society as a branch of this Institute in the south, and have accordingly approached the Council on the subject. Membership of the society is to be confined to registered members of this Institute. The Council are of opinion that the linking of architects into local branches will materially strengthen the Institute in the provinces, encourage the study of architecture, and will elevate the standard of professional practice. In view of recent developments in Belfast, the Council are considering the practicability of establishing a branch of the Institute on similar lines in the North of Ireland, a step which it is understood would be welcomed by many of our members in Ulster.

In accordance with the revised bye-laws, the nomination for a new president is left to the Council, and, subject to the sanction of the members, the Council nominee is elected president. The term of office of our present President expires on December 31, and the bye-laws having been complied with, Mr. Lucius O'Callaghan, F.R.I.A.I., has been elected President to succeed him. The Council feel assured that the interests of the architectural profession as a whole could lie in no safer or more capable hands.

On the retirement of Mr. W. Kaye-Parry from his present position as President of the Institute, the Council wish on behalf of all the members to express their sense of the strenuous activity, zeal, and ability which he has displayed in directing the affairs of this Institute during the past three years. Times have been abnormal, new and difficult situations have arisen from time to time, which are far beyond the usual routine of the Council under ordinary conditions, and the utility of his advice and the results of his guidance can be no better demonstrated than by the position which the Institute holds today in regard to its influence and the number of its members.

The vice-president has signified his intention of retiring from the Institute after a connection of close upon forty years as member and fellow, during which time he has gained and retained the esteem and affection of his fellow-members, and has during a period of secretaryship done much to advance the interests of the Institute. The Council feel that the members would not wish for such a complete severance, and have, with Mr. Owen's consent, resolved to take the necessary steps towards his election as honorary member.

The office work of the session has been extremely heavy, and, as will be seen from the statement of accounts, has involved a large expenditure. The number of letters issued during the past twelve months, apart from circulars, ballot sheets and correspond-

ence with members of Parliament, largely exceeds that of the previous three years added together. Printing, stationery, and postage have all increased in cost, and the remuneration of the assistant secretary, although still low in relation to the amount of work done, has naturally had to be augmented. The Council trust that the members will not regard this expenditure as without tangible result, towards which result the Press of this country have during the past year rendered invaluable services.

REPORT OF COUNCIL.

Mr. P. J. Lynch, in proposing the adoption of the report, said that it disclosed a record of hard work, attended by highly satisfactory results. The increased membership was an encouraging feature. A great step in advance had been achieved in the work done in obtaining a standard of efficiency for those employed in housing schemes throughout Ireland. He joined in the tribute to the incoming President, Mr. Lucius O'Callaghan, who, like his father, was an architect of great skill and scholarship.

Mr. C. Hoffe Mitchell seconded, and the report was unanimously adopted.

Mr. C. P. Sheridan, hon. treasurer, presented the financial statement, the adoption of which was proposed by Mr. O'Brien Smyth, seconded by Mr. S. M. Ashlin, and carried unanimously.

The retiring President, Mr. W. Kaye-Parry, read his valedictory address, in which he referred to the lifting of the war clouds and the promise of a restoration of trade and the rehabilitation of the peaceful arts. These were assured if all classes recognised that success must depend upon strenuous exertion and zealous endeavour. The future of the nation, he proceeded, is in the melting-pot; but as we have helped to win the war, it is unthinkable that we should be denied the harvest of a victorious success.

The Joint Council of Executive Professions recently constituted at the suggestion of the President of the Institution of Civil Engineers of Ireland is a welcome augury of improved and more harmonious relations between architect and civil engineers in the future. There is no necessity for any jealousy between two bodies of men both engaged in constructional work. Architects can co-operate advantageously with engineers, and the latter can seek inspiration in aesthetics from their architectural brethren. All that is wanted is that both should realise their limitations. Human life is far too short to enable any one man to be a master of every branch of the art and science of construction, and co-operation is becoming daily more necessary to grapple with the multitudes of problems which are embraced in the blessed word "reconstruction." When architects know that a cottage which was built for £218 in 1904 will cost £677 in 1920, they will recognise that the altered conditions necessitate the adoption of many kinds of improved methods of building.

As the industries of our country are developed the architectural profession will find profitable occupation in erecting homes for the workers and public buildings for a prosperous and wealthy nation. Before long we shall be doing on a smaller scale what is already being done on an extended scale in England, namely, providing in one centre three thousand houses with electric light, electric cookery, hot water heating, and a hot water service, all from one central station.

The President concluded with an expression of deep gratitude to the honorary officers and the Council for the invaluable assistance they had given him in his efforts to guide the destinies of the Institute during his presidential period.

Mr. R. Caulfield Orpen and Mr. A. E. Murray, on behalf of the Institute, thanked the President for his admirable address, and for the services he had rendered to the Institute during his three years of office.

Mr. G. L. O'Connor having paid a warm tribute to the honorary secretary for his devotion to the affairs of the Institute, and for the success which had attended his personal efforts in many directions during a most successful year, the proceedings terminated.

HARBOUR IMPROVEMENTS

At last week's meeting of the Institution of Civil Engineers four papers were read on Harbour Improvement. The first was on:

WATER HARBOUR IMPROVEMENTS
By JAMES SIMMONS, M.Inst.C.E.

This paper described the former state of the port of Whitby, and the reasons for the need of such work. The entrance of the harbour as it was before the carrying out of the new scheme of improvement was described, the study being on the outside the entrance, the narrow narrow and tortuous entrance channel, the lack of adequate quays, and the poor range of land into the harbour owing to a southward drift. A description of the new works—two new sea piers, a new fair way with deep water alongside a new entrance channel, the general deepening of the harbour, and various other works given for the expansion and Whitby was able to carry a large cargo of shipping.

The new East and West piers were designed to clear the channel of sand from the north-west and to remove the sand bar at the harbour entrance, which they also serve to reduce the range inside the harbour at stormy weather. To assist the latter object, interlocking jetties have been built out from the end pier heads, and by these means more than 60 per cent. of the breadth of the waves entering between the piers is carried out to sea again through openings set between the old and new piers. The effect of the new piers and wave-traps has been most satisfactory, the sand-bar having been completely removed, the entrance much safer in stormy weather, and the outer harbour made safe to remain lying in all weather.

The piers are monolithic concrete structures, carried to a level of 7½ feet above low water, and surrounded by timberwork breakers, on which roadways are carried at a level of 22 feet above low water. They are founded throughout on strong shale rock, at depths ranging from 2 feet to 12 feet below low water.

THE DESIGN OF HARBOUR AND BREAKWATERS WITH A VIEW TO THE REDUCTION OF WAVE ACTION WITHIN THESE AREAS.

By RALPH FRANKLIN HINDS, M.Inst.C.E.

The author pointed out the importance of the subject both in connection with the design of new harbours and with regard to works of improvement or alteration carried out in existing harbours, and referred to several principles on which the reduction of wave action depends.

He then traced the development of the Tyne Harbour Works, stating some of the reasons which influenced the late Mr. James Walker, past-President Inst.C.E., in laying down, about 1855, the position of the Tyne piers as designed by him.

In its natural state, when met with rocks and shoals, and with a winding entrance channel, there did not appear to have been much wave disturbance in the harbour.

Complaints were first made when dredging was taken in hand on a large scale, at which time there was still a considerable distance between the pier heads and as a result of such complaints Sir John Coode, past-President Inst.C.E., was consulted in 1864. His opinion was that the changes wrought by dredging, coupled with the action of the piers in confining the sea to the currents, had brought about an entire revolution in the state of affairs, and he recommended—

1. That the southern wave-trap then in course of construction should be enlarged, and the bed of the trap from low water up to high water formed at an inclination of about 1 in 30.
2. That the position of the timber groynes on the north side of the harbour, forming the continuation of the stone groyne near Clifford's Fort, should be altered to its present position, and an additional groyne formed to the westward so as to form the present northern wave-trap.

These recommendations were subsequently carried into effect, and the wave-traps and groynes are still substantially in the form suggested by Sir John.

WAVE ACTION IN HARBOUR AREAS, WITH SPECIAL REFERENCE TO WORKS FOR REDUCTION AT BLYTH AND WHITBY HARBOURS.

By JOHN WATTS BARNES, M.Inst.C.E.

The paper drew attention to the difference between range waves from the sea and short wind waves raised within a harbour. When propagated into a harbour through a deep entrance channel, waves do not local, and their velocity and momentum are only gradually quelled by the reaction of still water within the harbour.

At Blyth, with sea waves at the present depth of 15 feet to 12 feet in height, range waves in mid-harbour vary from 6 inches to 26 inches in height. Such waves move ships alternately ahead and astern, and the momentum imparted to heavy ships when their moorings are slack has proved sufficient to break steel mooring-bowches. The reduction of range at Blyth has been effected by the construction of interlocking jetties. A new west pier to be constructed will provide similar jetties.

THE IMPROVEMENT OF THE ENTRANCE TO SUNDERLAND HARBOUR, WITH REFERENCE TO THE REDUCTION OF WAVE ACTION.

By WILLIAM SIMMONS, O.B.E., M.Inst.C.E.

The author briefly described the practical results of wave reduction at the two entrances to Sunderland Harbour, devoting particular attention to the North, or River Wear entrance, which is protected by sea piers of recent construction. An account was given of the early progressive attempts to improve the entrance to the River Wear, culminating in 1853, in the completion of two sea piers, which proved of great benefit to the port. The construction of these piers, however, was the means of bringing more swell into the harbour, which seriously interfered with the activity of the interior. A law was also persistently formed at the pier-heads, to the inconvenience and danger of shipping. The question of an improved entrance to the River Wear was referred to the Admiralty in 1856, who recommended the construction of sea piers extending into deep water. With this recommendation before them the River Wear Commissioners (the Port Authority) consulted several eminent engineers, including Sir John Coode, Past Pres. Inst.C.E., whose scheme of 1875 was adopted, and a commencement made with the works in 1885, under the late Mr. H. H. Wake, M.Inst.C.E. The original width of entrance of 500 feet proposed by Sir John Coode was increased to 600 feet by Mr. Wake, and later to 700 feet by the author. It had been proposed to complete the protecting piers before deepening the entrance channel, to avoid increase of swell into the harbour, but the matter having been referred to the author, he decided, in 1909, to proceed with the deepening and improvement of the channel before completing the South protecting pier. At that time there was a depth of 10 feet at l.w.o.s.t. in the channel, and the distance between the completed North or Roker pier and the end of the unfinished South pier was 770 feet. In coming to this decision the author had in view the desirability of securing the largest possible entrance to the port, while opportunity afforded, consistent with reasonable protection of the interior from swell, and considered that it would be possible to meet an increase of swell by the provision of an anterior expanding area. As a preliminary to the deepening operations, the seaward half of the inner North pier was reconstructed, as the foundations had shown signs of giving way. Deepening operations were commenced in 1909, when a depth of 15 feet at l.w.o.s.t. was obtained, and, as there was no perceptible increase of swell, these operations were extended until 20 feet at l.w.o.s.t. had been got. At the same time an inner expanding area was extended and deepened. A large part of this work consisted in the removal of limestone rock, which was carried out by the rock dredger "Wear" without either blasting or breaking up by mechanical means.

No increase of swell at the harbour having

resulted from these operations, the author recommended the completion of the South protecting pier by adding a head only, so as to leave an entrance of 700 feet, and this work is now in hand. As a result of the construction of the protecting piers, and the deepening of the entrance channel, the harbour had so long encumbered the port, has disappeared. The general conclusions which the author draws, in regard to the River Wear entrance are that the proportions of expanding-area to entrance and disposition of wave basins of the exterior are generally satisfactory, the factor of wave-reduction by these agencies being about 65 per cent. For the inner expanding-area the results are good, as traffic is not interfered with during storms. The total value of the wave-reducing agencies, both exterior and interior, is about 90 per cent.

With regard to the South entrance, the author explained its general configuration and design, and showed that the results are not satisfactory, as the expanding-area is too small and shallow, the factor of wave-reduction being only about 40 per cent.

"LUXURY" BUILDING.

The new regulations devised to stop building likely to interfere with the erection of dwelling-houses seem to us not unlikely to prove as great a success as the administration of the profiteering regulations has been. Their principal points are:—Middle-class as well as working-class interests are to be considered. Local authorities are to determine relative urgency. Such authorities are urged to secure agreements with local builders for definite programmes. An appeal tribunal is to be established, the five members of which will be a chairman with legal training, an employer's representative, a workers' representative, a local authority's member, and a representative of business men.

The power to stop is to be exercised where it appears to a local authority that new housing is being, or may be, delayed by the construction of buildings of less public importance than new dwelling-houses.

The regulations do not attempt to define "luxury building." The local authority will have merely to determine whether a building is delaying housing, and whether it is of more importance than this building or new houses should be erected.

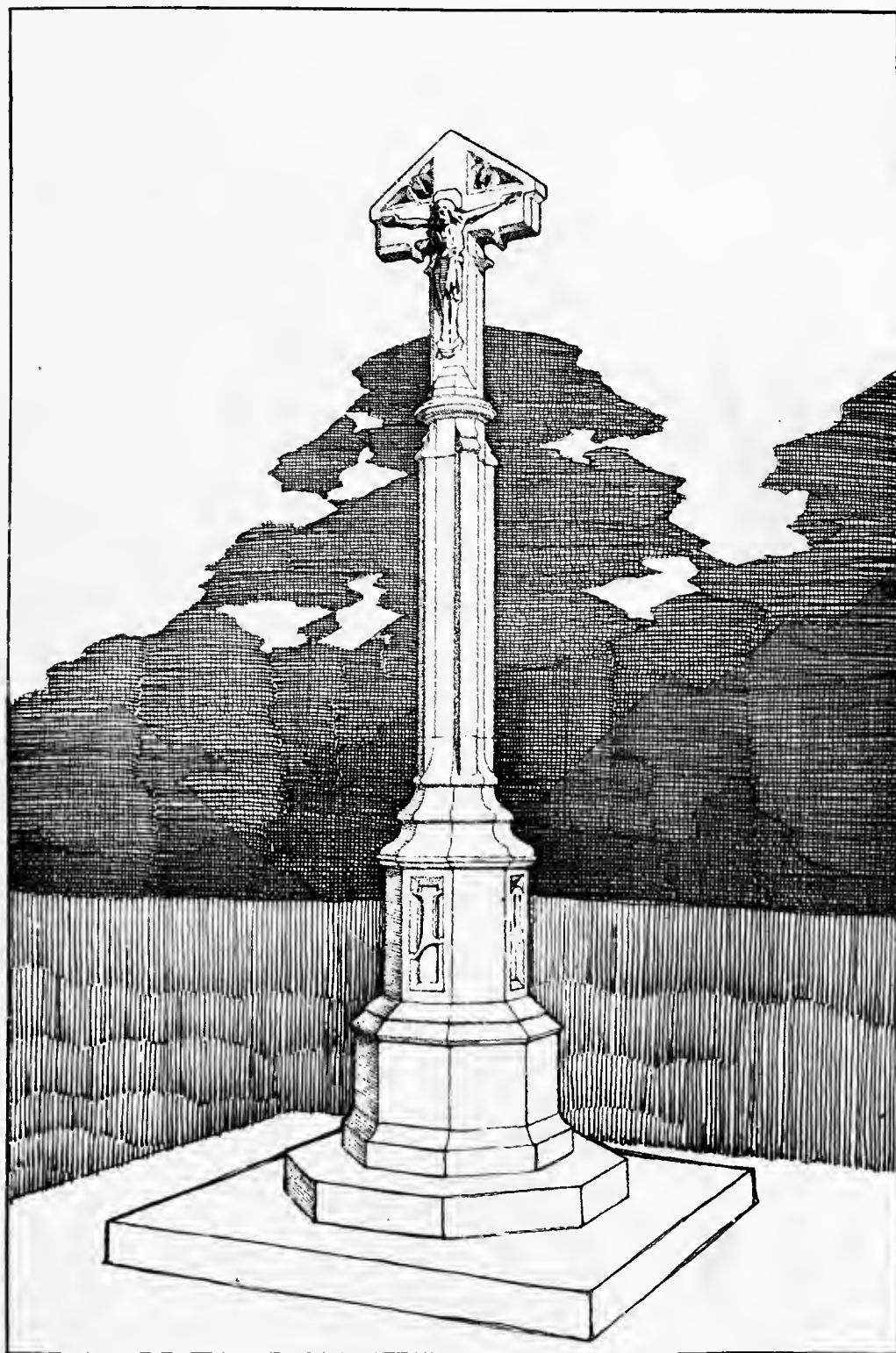
On this second point many difficult questions may arise. A new factory, for example, means more work, more wages, and more production, and its construction should only be prohibited or delayed with the greatest difficulty. On the other hand, if there are no vacant houses in the district, and new labour is likely to be attracted to the factory, with the result that overcrowding would be aggravated, it might well be that the building of the new factory or a proportion of the new building should be held over.

The decisions will in not a few cases prove capricious, and in not a few vexatious. In all delay will result.

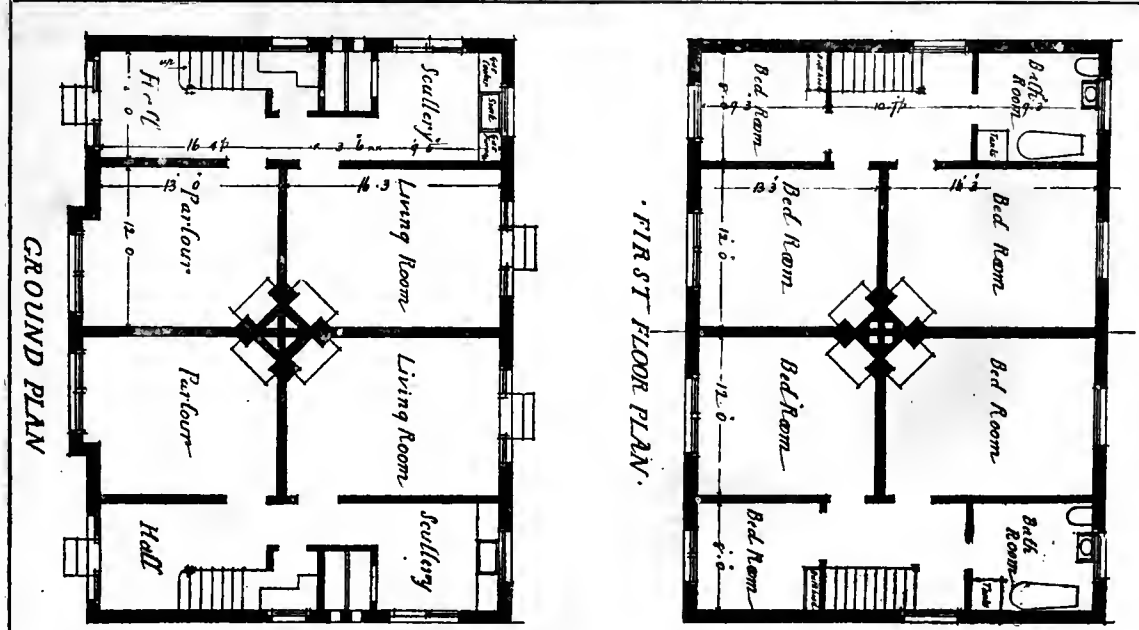
The Duke and Duchess of Hamilton have presented the Neuberger Cross to the burgh of Hamilton. The cross is of Celtic design, and is believed to belong to the period of St. Kentigern, the apostle of Strathclyde, before Scotland was a kingdom.

At an inquest at Oswestry on Monday on the body of Henry Titus Wakelam, Ashley Gardens, London, surveyor and engineer for the county of Middlesex, who died on Sunday night, it was stated that he had been suffering from insomnia. On Sunday afternoon, about five o'clock, he took hydrochloric acid in mistake for medicine.

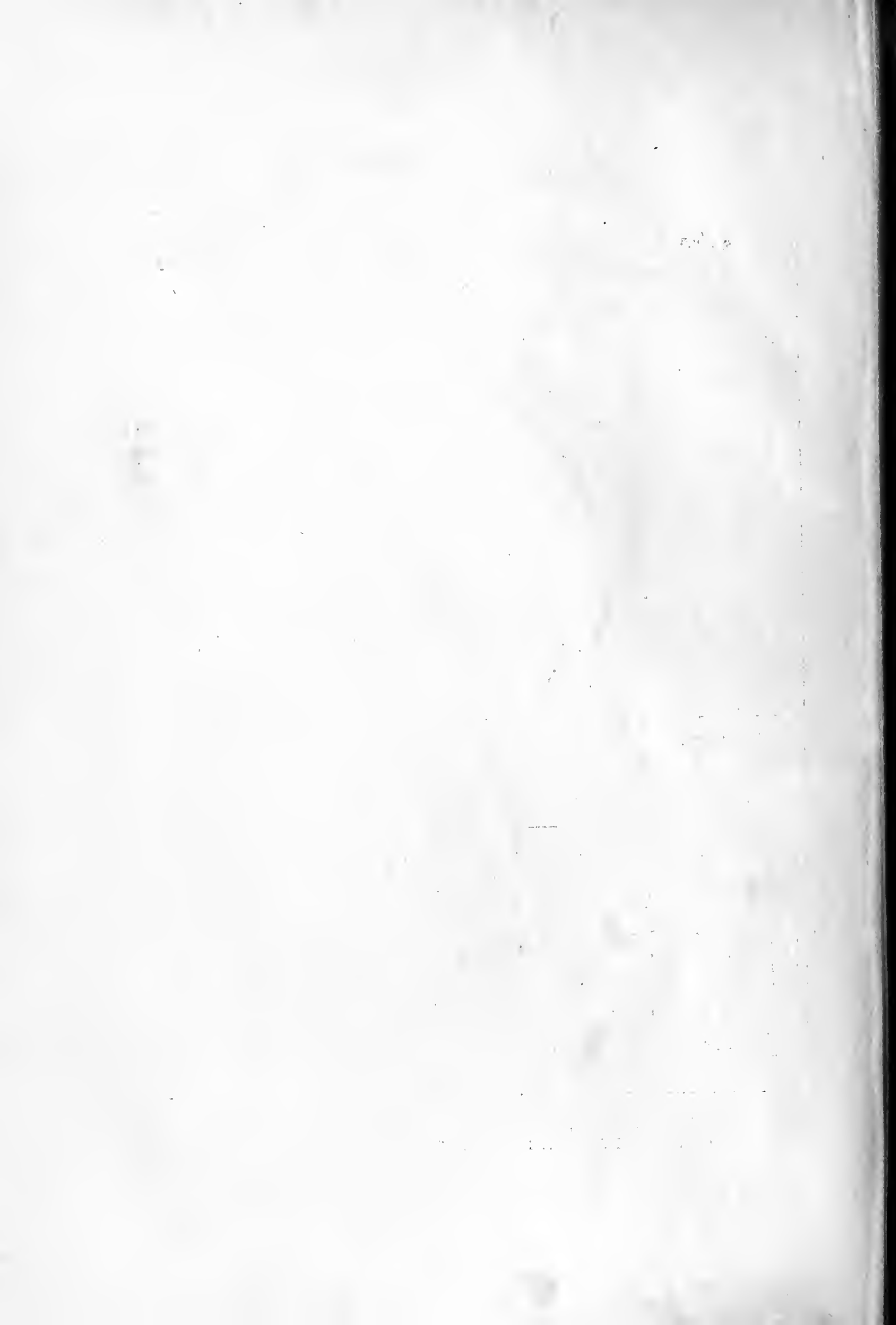
The Melton Mowbray Urban District Council received 96 applications for the post of surveyor, waterworks engineer, and sanitary inspector. By a unanimous vote of the General Purposes Committee, Mr. W. H. Jarvis has been appointed. He is 35 years of age, and the town of Erith, where he is assistant engineer and surveyor, had a population of 27,750 at the 1911 census. Mr. Jarvis has passed the examinations for membership of the Institute of Municipal and Sanitary Engineers, the Society of Architects, and the Royal Sanitary Institute. It is hoped that he will be able to take up his duties in a month's time.



MEMORIAL CROSS AT LUTTON, LINCOLNSHIRE.
Lieut.-Col. J. E. DIXON-SPAIN, F.R.I.B.A., Architect.



WORKMEN'S COTTAGES, KING'S NORTON HOUSING EXPERIMENT:
"BIRMINGHAM DAILY MAIL" BUILDING SCHEME.



55-58.



BUSH HOUSE, INTERNATIONAL SALES BUILDING
Messrs. HELMLE and

NUARY 23, 1920.



GRAND ISLAND SITE : THE KINGSWAY VISTA.
CBETT, Architects.



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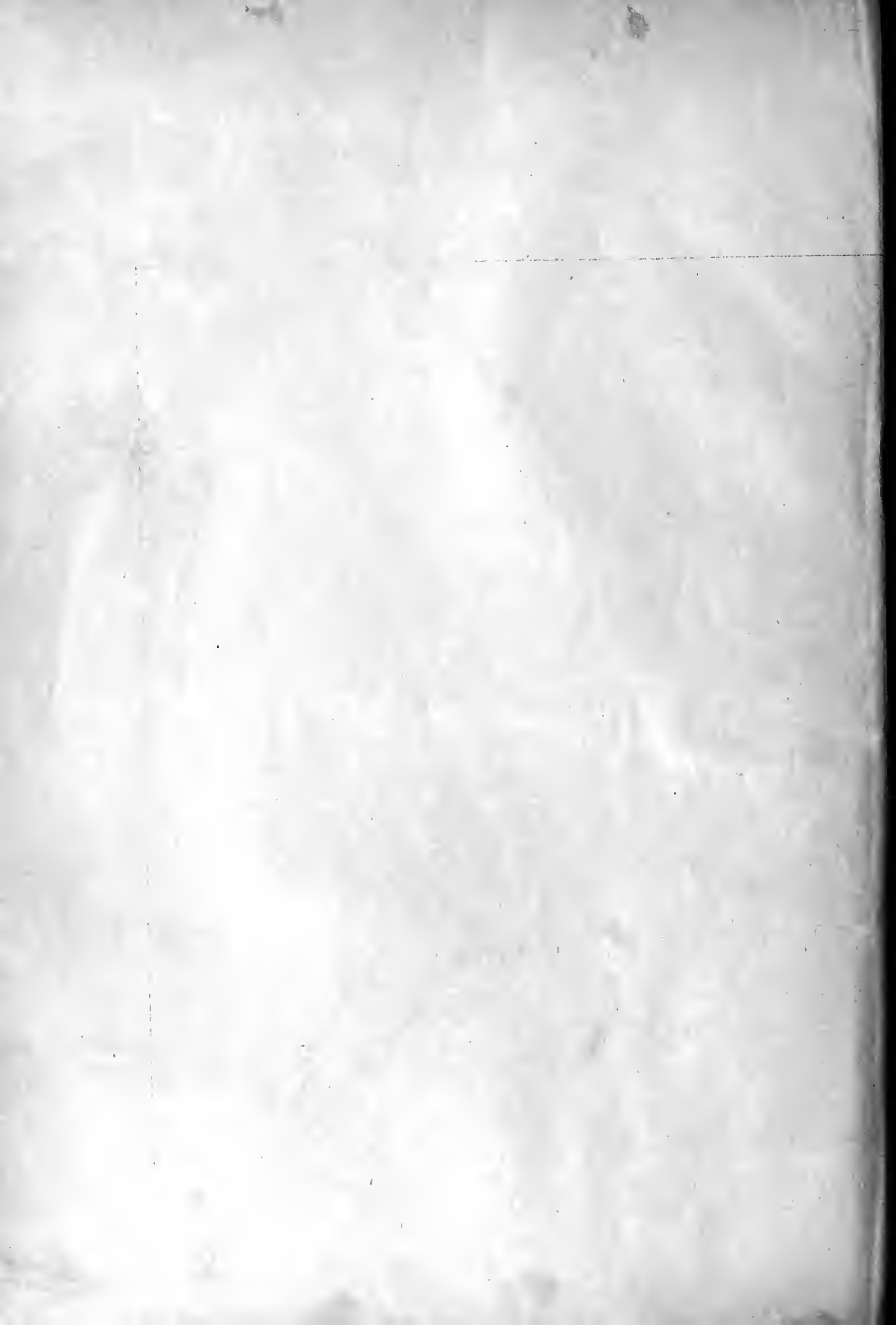


BUSH HOUSE, INTERNATIONAL SALES BUILDING
Messrs. HELMLE and

JANUARY 23, 1920.



STRAND ISLAND SITE : ALDWYCH FACADE.
BRETT, Architects.



THE ARCHITECTURE OF SIR ASTON WEBB, PRESIDENT OF THE ROYAL ACADEMY.*

Referring to the state of architecture at the outset of Webb's career—it being during his pupilage that the London Law Courts competition was held—it was submitted that, influenced considerably by Ruskin's writings and Street's "Some Account of Gothic Architecture in Spain," the two who really caused the scales to waver in the days of the battle of the styles, Gothic versus Classic, and showed there was also a *via media*, were Alfred Waterhouse and Norman Shaw.

In 1873, the year Webb, at the age of twenty-four, commenced practice, he also gained the Pugin Scholarship of the R.I.B.A., awarded annually for drawings and sketches of mediæval buildings in the United Kingdom. It was soon seen that, in regard to elevational treatment, the classicism of Banks and Barry, with whom he had served his articles, had had practically no influence upon him, and, moreover, that he was far from being a passionate Gothickist, though any Gothickist of those earlier years may well be proud of his efforts. He, however, gave very full evidence that he had formed a decided opinion, which was strengthened with the course of life, on the supremacy of plan in architecture; in fact, plan, with main focus and primary factors, was to him the basis of all architecture, and embodied the eternal unchanging principle, whilst elevation, with its dressing, though of very high importance to every nationality, was in every age temporary and variable according to time periods.

So, unlike Shaw (whose career was dealt with at this Society awhile ago), Webb was socially built, and dearly loved close association—and that of most active order—in organised professional society, which was greatly to his own gain and that of the Architectural Association and Royal Institute of British Architects. Further, into the very foundation of his life entered the friendship of Ingress Bell. As Webb put it, when paying high tribute at the time of the bestowal upon him of the Royal Gold Medal of the R.I.B.A. to the many assistants and others to whom he was indebted: "I owe most of all to my friend Ingress Bell, with whom I had shared many successes and disappointments during the last twenty years, as did the buildings in which we had been jointly associated. Not only in matters architectural, but in many other walks of life, Mr. Bell's example had inspired me."

Possessing a personality and method of work which drew unusually promising young men to his office, linked with a keen power for not only seeing the nature of the character at the back of the countenance and bearing, but that of detecting the temperament which gave most promise of getting on with best, he readily gained the confidence of those whom he engaged, whilst they in return felt assured they had his, and so conditions were unusually favourable for successful results.

Though not definitely knowing, Mr. Lucas considered that in the matter of competitions Webb resolved far more than architects generally did in restricting the nature of the buildings competed for, and therefore the competitions entered into were relatively few, and as far as was known, all on a big scale, and mostly in conjunction with Ingress Bell. When aged thirty-five, that of the War and Admiralty Offices was announced—the greatest competition since that of the Law Courts—and their design was placed third out of the 128 submitted, showing a plan of considerable dramatic force and an elevation very French chateau-like in character. Then came their pioneer success in the Birmingham Law Courts, which have served as a model for many similar buildings since, and still, after thirty-three years, stand, architecturally, very high. There were 125 competitors, and Waterhouse was assessor.

Naturally so far greatly encouraged by their realisation that the most obvious thing in planning was very generally so difficult to perceive, and that it was far too risky to take anything for granted without close study of site and locality, at the initiation of every

design those factors were prominently kept in their minds.

Shortly after the Birmingham success, a fine combination of plan and elevation, with an isolated tower of highly ideal character, though it failed to secure the Imperial Institute reward, showed unusually marked ability; and no doubt the study then involved did much to secure for him and Bell, a few years later, the South Kensington Museum, when a magnificent treatment of Spanish Gothic was quite worthy of a splendid plan.

At that stage, it may be remarked that whenever comparing the work under review with that of Shaw, it should be very fully remembered that the latter steadfastly adhered to his early resolve never to submit a design in competition, thereby absolutely cutting himself off from any possibility of certain public edifices being entrusted to him, whilst Webb was never more in his element than when on competitive work of great magnitude.

Defeated in the Masonic College for Boys, success was attained in Christ's Hospital Schools, where, on an open unrestricted site, very ample scope was afforded for the expression of several of their favourite principles in planning. The Royal Naval College, Dartmouth, was entrusted directly to him, and on a beautiful site, close to the sea, and 180 ft. above it, a structure over 700 ft. frontage, with allied buildings, produced an imposing result; and about the same time plans for a palatial mansion, "Hildon," Hants., were prepared, the erection of which cost about £30,000.

Contemporary with all that, a very full measure of duty was rendered the R.I.B.A. as Honorary Secretary, and latterly as member of the Council; and just prior to election, at the age of fifty, as an A.R.A., in the midst of engrossing work and service, he most generously set forth in detail what experience had taught him in regard to planning, at the opening meeting of the Architectural Association's School of Design.

Summarised, the commanding element of plan was the crux of every scheme, and not only in the assertion of the main idea in internal arrangements and the disposition of solids and voids of enclosing external walls, but in regard to the placing of the structure on the site and the method of approach. To him, the frontage of a structure being at right angles to approach, should take precedence to its being parallel to the boundary line. And in all public buildings, symmetrical simplicity of arrangement should prevail, with directness of access by broad, well-lighted symmetrical corridors. Staircases were best at ends of corridors, and the chief entrances to main halls at their end. All who had studied Webb's work cannot have failed to realise how successfully he had acted on those lines, and very especially in gripping the individuality of a site where frontages and approach occurred in irregular manner, and by sheer devotion to a point not generally thought of, lifted the external effect out of the commonplace.

The coming of the present century found Webb with an enormous practice—buildings in hand and plans in preparation. In the midst of those activities he was invited, in 1901, as one of five, to compete for the Victoria Memorial, embodying new foreground and approach to Buckingham Palace. The problem was essentially one of plan—the setting on site, vistas, avenues, open spaces, etc.—demanding dramatic presentation as to immediate requirements and prospective ideals, and pre-eminently gave Webb a superlative opportunity to express the architectural ambitions and strivings of his life. So passionately had he openly defined and pleaded for such lines to be given attention to in all public planning, that his success must have meant to him peculiarly keen satisfaction: whilst the working out of the scheme, to which was added the remodelling of the front of Buckingham Palace and new buildings for the Admiralty with allied archway at the other end of the Mall, during some sixteen years, had made great demands upon his powers. The deep regret was that all members of the profession were not given an opportunity to compete in that National Memorial, but there was common agreement as to its great achievement.

Birmingham University, Law Courts, Hong Kong, and the Royal College of Science, all entrusted directly to him, soon followed that competitive success. Immediately opposite the Imperial Institute, London, the Royal College of Science (each with a frontage of over 800 feet) presented the fullest scope for combination of foreground, plan and elevation, and will possibly rank in history as the greatest of the many public buildings executed from his designs.

In those early years of the century, there also came to him (and most worthily so) the Presidency of the R.I.B.A., election as a Royal Academician, knighthood, and the Royal Gold Medal of the R.I.B.A. Later years have seen, among other items, the completion of the Victoria and Albert Museum, South Kensington, but, elevationally, on very different lines to the original design; some charming collegiate Gothic work at Cambridge, in conjunction with Ingress Bell; and some quite ordinary classic work in the Royal College of Science, Dublin, in conjunction with T. M. Deane; also a very fine conception, though unsuccessful, for the Ottawa Government Buildings, in conjunction with his elder son and E. White. The war years meant relatively to such an office not much great work; and Webb's two sons, following professionally in their father's steps, were away at the War (alas! the younger never to return). But he was far from idle with extensive additions to the Royal Naval College, Dartmouth, Leys School, some war memorial schemes, and ordinarily current work, plus the completion of that of pre-war days. And news had just come through that the very important improvement scheme for Piccadilly, following on the lines of that of Norman Shaw, and prepared for the Office of Woods and Forests during the War by Blomfield, Webb and Newton, in conjunction, had been approved of; and of that one eagerly awaited illustrations.

To the many self-imposed duties of various societies, there was added the paper on "Proposals for the Improvement of London," read by him last year before the Royal Geographical Society.

Now, as President of the Royal Academy, the highest possible position that had ever reached an architect, not only in his own profession, but in the world of art, was his.

Summarising his work, Mr. Lucas said the strength and weakness lay in unusual measure in Webb's ultra-restlessness over every design of great magnitude, especially when the result of competition; and it would scarcely be doubted that thereby plan became stronger and therefore benefited, and elevation weaker and therefore suffered. Perhaps the most noteworthy instance in which those effects were seen in combination, was the Victoria and Albert Museum, producing externally what a reviewer had termed "the most outstanding example of the New Renaissance," that could hardly be claimed equal in merit to that of the accepted competitive design. Possibly far more eclectic than any of his leading colleagues, what Webb's canon of beauty in elevational dressing was it was very difficult, if not impossible, to define. That there was evolution was apparent, though consistency did not seem to always exist. Individualistic impressionism certainly by no means strongly characterised the sum total of his work elevationally at any one specific period. A Renaissance treatment of classic of a certain order maintained some charm for him, and was occasionally poetically rendered: and an entrance to schools at Worcester was of the order any lover of Gothic might be proud of. But it was regretted he and Bell were not far more successful in their attempt at classic alongside Inigo Jones' Banqueting House, Whitehall.

Had he, and certain of his peers, early in life realised far more fully what Gilbert Scott (not long out of his teens), in that striking report on his successful design for the Liverpool Cathedral early in this century, said: "No amount of rich ornament can equal the beauty and charm of a blank wall, relieved by a touch, but only a touch.

*From a Paper read before the Victorian Architectural Students' Society, at the Rooms, August 19th, 1919, by William Lucas (F.R.S.).

of rich detail," architectural expression or the previous half-century would have substantially gained.

Still, Sir Aston Webb's main contribution to architecture, throughout an unusually brilliant career characterised by so exceptional a measure of devotion by conduct and speech to the advancement of others and the cause of the profession, had been (and is hoped it would long continue) emphatic fidelity to the supremacy of plan, which was ever far greater than any elevational expression.

THE "BUILDING TRADES" PARLIAMENT.

A report of the quarterly meeting of the Council of the Industrial Council for the Building Industry held at York on November 25 last reaches us only just as we go to press. Seventy-five representatives attended, and in the absence of the chairman and vice-chairman the hon. treasurer, Mr. John Batchelor, presided. Total receipts and expenditure were reported as leaving a balance in hand of £128 14s. 0½d. As regards revenue for the current year ending June 30, 1920, it was resolved that the Administrative Committee be empowered to give three months' notice to alter the £1,000 in Rule 21 to "such larger figure as may be deemed necessary."

The chairman of the Education Committee (Mr. S. Smethurst) submitted a long interim report upon education as applicable to this industry. As the report had not previously been placed in members' hands, it was not discussed exhaustively, fuller discussion being deferred until next meeting.

The adoption of rules for the establishment of regional councils was again referred to, and a suggestion was made that pending a decision upon the proposal to have representatives of the architectural and surveying professions on the council, which would entail consequential alterations in these rules, it was advisable to suspend publication thereof. On motion made and seconded, the council approved this suggestion.

The following resolution received from Regional Production Committee, Region L, was considered:—"(a) That this committee urges upon the Ministry of Health the immediate necessity of stimulating and increasing the number of apprentices in several branches of the building trade, especially bricklaying, masonry, carpentry, and joinery, there being a deficiency of skilled artisans in such trades available for the effective carrying out of the Government's housing programme recently approved by Parliament; and, further, that all Education Committees throughout the country be requested to foster and assist the creation or continuance of such apprenticeships in the national interest. (b) That the trade unions connected with the building trade be requested to co-operate in fostering the apprenticeship system, and that the present limits as to the number of apprentices be reconsidered, bearing in mind the pressing necessity for additional houses and the vast amount of reconstruction work now required both in England and on the Continent." On motion made and seconded, it was referred to the Educational Committee for consideration and report.

In accordance with the decision of the annual meeting of the Council, representatives had been invited to attend this meeting from the Royal Institute of British Architects, the Society of Architects, the Surveyors' Institution, and the Quantity Surveyors' Association. Mr. A. W. S. Cross (London), Vice-President, represented the R.I.B.A.; his colleague, Major Harry Barnes, M.P., F.R.I.B.A., was unable to attend on account of his Parliamentary duties. Mr. G. H. Wenyon (London) represented the Society of Architects, and Mr. John Watson (Hull) the Surveyors' Institution. Consideration was given to the desirability of the professional bodies representing architects and surveyors becoming affiliated to this Council, and the opinion being favourable, on motion made and seconded, it was unanimously resolved:—"That the professional bodies representing Architects and Surveyors, viz., the Royal Institute of British

Architects, the Society of Architects, the Surveyors' Institution, and the Quantity Surveyors' Association, be invited to become affiliated to this Council." It was further agreed that the professional representatives appointed to attend this meeting be invited to meet the Administrative Committee of the Council or representatives thereof, to devise a method of affiliation for the approval of the respective bodies concerned.

Mr. Moffat urged the advisability of better regulation as to the publication of reports of the proceedings of the Council, which had not been adopted by the Council. The question was referred to the Administrative Committee for consideration.

The question of the reduction in the height of rooms which appears to be favoured by those responsible for the Government Housing Schemes in Scotland was raised by the Scottish representatives, who protested against it.

Eventually, on motion made and seconded, it was unanimously resolved:—"That the Resettlement Committee receive the complaint relating to heights of rooms for dwelling-houses, presented by our Scottish representatives, and, if after consideration it seems necessary, act thereon."

This concluded the business.

WHO PAYS THE INCREASED WAGES?

While Labour recklessly rocks the industrial boat by its demands for higher wages and shorter hours, the question naturally arises, "who pays the increased wages?" Is it Capital or is it Labour itself, with Capital as a go-between? Manufacturers, in making up the selling price of goods, figure the cost of the raw materials, labour, overhead charges, and add a certain percentage to realise a profit, which latter amount is usually allocated to renewals of plant, interest, and dividends in certain proportions. If raw material goes up in price, or labour costs more, the producer necessarily adds the same percentage, and it is immaterial—up to a certain standard—what the raw material costs or what wages labour gets, providing the increases can be adjusted or passed on. If the cost of raw materials or wages do not advance the same all over the country then the producer suffers, but eventually the extra cost falls on the consumer. As the number of capitalist producers is small compared with the number of labour producers, the bulk of the burden must be borne by the latter.

One of the most remarkable phases of the present crazy attitude of Labour is, not being satisfied with increased wages, shorter hours are also demanded, which has the effect of increasing the cost of production—and incidentally of living—and burning the candle at both ends. If Labour took a practical view of the situation, and in abnormal times like the present, instead of demanding shorter hours would work longer, production would be increased, and wages could be raised, without increasing the cost of the goods; in fact, the adoption of such a policy would reduce the cost. Then, when conditions became normal, shorter hours could again be resorted to. The fact of the matter is that Labour fails to recognise that it is not working so much for an employer as it is for its fellow-man. With increased production and consequent lowering of price, the community benefits. With decreased production and consequent higher prices the community suffers—and as the labour-producer forms the bulk of the community, he is by his present policy developing a form of race suicide.—*Industrial South Africa.*

Marshal Foch will lay the foundation-stone of a memorial to the Dover Patrol at Cape Blanc Nez, near Calais, on Monday.

The following is a ready method of finding out whether a paper is capable of varnishing. Pass a clean white handkerchief roughly over the surface to see how much of the colour is loose. If the handkerchief is much affected the paper is hopeless, and it can only be made a success if machine-sized, and sometimes even then it may prove a failure. If the colour seems fairly fast, wet the tip of the finger and see how the colour rubs. If it does not move, one may safely size and varnish.

PROFESSIONAL AND TRADE SOCIETIES.

THE ARCHITECTURAL ASSOCIATION.—A special general meeting of the association will be held at 34 and 35, Bedford Square, W.C., on Monday, January 26, 1920, at 6.30 p.m., at which the Council will ask members to approve a proposal to incorporate the association. Incorporation will place the association in a much more satisfactory position in many respects legally than it is at present, and it will abolish any question of personal liability of members, trustees, and members of the Council. The Council is advised by the Association's solicitors that the course it is proposing to take is a most desirable one, and is one which has already been taken by many other professional institutions and societies. The incorporation will be arranged so as not to affect the general status of members. Copies of the articles of association may be inspected on application at any time prior to the meeting. These articles have been drafted so that women may be admitted as members, if, as the Council believes, there is a general wish amongst the present members that women should be eligible for election in future. Various alterations in the bye-laws will be necessary at a later stage, and a further meeting will be called for this purpose. At the meeting the question of a suitable memorial to members who fell in the war will be discussed as suggested in the December number of the *A.A. Journal*.

ARCHITECTURAL ASSOCIATION OF IRELAND.—Mr. George F. Beckett, the president, presided at a meeting of the Architectural Association of Ireland on Tuesday, January 13, 1920, in South Frederick Lane, Dublin, at which a lecture on "Inscriptions" was given by Mr. George Atkinson, R.H.A. The lecturer, as a preliminary to a proper understanding of inscriptions, traced a development of the Roman alphabet through the influence of tool and material, and emphasised the necessity for a correct appreciation of the natural growth of letter forms in grading the choice between good and bad forms. An interesting series of lantern slides was shown of Roman inscriptions in stone and marble, and the subsequent variations of the letter forms as found in manuscript. Coming at the present time, when the demand for inscriptions for memorials is so great, the lecture was most opportune and useful to the members of the association. At the conclusion a cordial vote of thanks was carried.

EDINBURGH ARCHITECTURAL ASSOCIATION.—Last Friday night Sir George McCrae, D.S.O., the Chairman of the Scottish Board of Health, lectured before the Edinburgh Architectural Association, on "The State and the House." He described in some detail the causes of the present shortage. In 1913 only some 2,491 houses were built in Scotland, as compared with 12,933 in 1905. In England the figures were 45,632 in 1913, as compared with 99,905 in 1905. The similarity of these figures with those of Germany was significant. If we kept in view that perhaps no two countries were more industrially alike than Britain and Germany, this should give us food for thought. Was there something fundamentally wrong as regards house-building in the economic conditions appertaining thereto in both countries? Were the wages earned by the workers sufficient to pay for an economic house? Or was there something lacking in the ideal standard of comfort on the part of the working classes and to the price they were willing to pay for suitable accommodation? These problems would have to be faced in the period of reconstruction. Whatever expedients might have to be adopted under stress to meet an altogether unprecedented and tragic shortage of house accommodation, a stabilised economic position must be the goal of our endeavour. A great national effort was absolutely necessary, and the support of all classes was required to meet a national emergency. What was being done in Scotland to make good the shortage in housing? Land had been acquired. The ground had been surveyed. Lay-out plans had been adjusted. House plans for 16,353 houses had been approved by the Scottish Board of Health. Tenders had been ap

proved for the erection of 2,940 houses. Requisitions had already been made for building materials for the erection of 7,000 houses. Without being unduly optimistic, they might look forward to having 10,000 additional houses erected and completed by the end of 1920.

LEGAL INTELLIGENCE.

CARPENTER'S BONUS.—An important action was commenced in the King's Bench Division on Tuesday, brought by James Bradford Kitt, residing near Cardiff, against Messrs. Henry Boot and Sons, Ltd., of Sheffield, for a declaration that he was entitled to be paid a bonus of twelve and a half per cent. on all wages earned by him at time rates while in the defendant's employ at Chepstow, Monmouth. The amount he claimed was £5 3s. 11d. It was stated that Kitt was a carpenter and joiner working for the defendants, who were Government contractors at the Chepstow Shipbuilding Yard. He was a member of the General Union of Carpenters and Joiners, which was affiliated to the National Federation of Building Trades' Operatives, the defendants being members of the National Federation of Building Trades' Employers. The dispute arose in respect of an arrangement made between the two bodies. In November, 1918, the plaintiff received 1s. 3d. per hour plus allowances and a 12½ per cent. bonus. In December the two bodies met, and as a result the pay was increased to 1s. 4½d. from January, and 1s. 6d. from February, nothing being said about the bonus. The increased wages were paid, plus the bonus, till March, and on March 5 the following notice was posted at the works:—"In the absence of a definite ruling as to whether the 12½ per cent. bonus should merge into, or be paid additional to, the advance in wages recently granted to operatives in the building trades, payment of same will be suspended as on Wednesday, March 5, pending a definite ruling on the point. In the event of same being decided in favour of the operatives, payment will be made retrospectively." In June there was another meeting of the Employers and Workmen's Council, resulting in the matter going to the National Council, who awarded 1s. 7d. an hour, and it was understood that that included the bonus. That was to come into operation from June, 1919. The men were disappointed, and as a result the Government interfered, and an arrangement was come to under which the time rate was increased to 1s. 8d. The plaintiff now claimed his bonus from March till June. Evidence was heard, and the hearing was adjourned till Wednesday, when the plaintiff's case was that the absence of consent by the Minister of Labour could not do away with an arrangement that was a bargain, and that whatever the rate of pay he was entitled to the bonus. The defendants' reply was that the bargain was collective and binding. For the defendants, Mr. Schiller, K.C., argued that the question rested entirely upon the interpretation of the prescribed wages set out in the Wages' Temporary Regulation Act (Section 4). He contended that the agreement of December, 1918, which raised the time pay from 1s. 3d. to 1s. 6d. an hour merged the bonus in wages. Counsel said he thought the position was that the men demanded an increase plus bonus, and the Minister of Labour said that he should not assent to that. On February 27 the Minister of Transport wrote assenting to the increase, provided that it merged the bonus in the South Wales and Monmouth district. Mr. Justice Roche: That letter only says that that is the attitude of the Minister of Labour as he understands it. The Minister of Labour would not allow another department to give or construe a decision for him. Judgment will be given on Monday morning.

The Central News states that Mr. Robert Burns, A.S.R.A., has resigned his association of the Royal Scottish Academy. No reason is assigned for the resignation. Pictures by him are now in the public galleries of Melbourne, Munich, and Liverpool. Mr. Burns was Professor of Painting at the Edinburgh College of Art from 1903 until last year.

Our Office Table.

The Flint Town Council have received an intimation from the Office of Works that they have taken over the custody of Flint Castle, and will commence the repair work which is needed at an early date. Flint Castle, though in ruins to a great extent, is one of the noblest and most interesting of the North Wales chain of Edwardian castles. It is situated close to the shore, and is of square design, with large circular towers at each angle. The castle is believed to have been erected by Edward I., who, in 1284, granted "at Filynt" municipal charters to Flint, Rhuddlan, Conway, and Carnarvon. In 1399 the castle was the scene of the betrayal and deposition of Richard II. During the Civil War the castle was garrisoned for the King by Colonel Sir Roger Mostyn (an ancestor of the present Lord Mostyn), who had to surrender it to Colonel Brereton. The first Constable of Flint Castle, who held office in 1278, was Gwneclin de Badelsmere. The present Constable is Mr. Herbert Lewis, M.P.

The British Museum has recently acquired from the executors of Sir Edward Poynter, Bt., a number of drawings, by the late President of the Royal Academy, sufficient to represent the work of his best period in great variety, both of style and subject. Beginning with some of his early designs for book illustration (1862), the selection includes some of the many drawings for "Israel in Egypt" (1867), a few of the masterly studies for the fresco of "The Stoning of St. Stephen" in St. Stephen's Church, South Dulwich (1872-73), designs for the projected decoration of the dome of St. Paul's Cathedral, and studies for figures and details in many of the President's well-known Academy pictures, such as "A Suppliant to Venus," "Atalanta's Race," "Nausicaa," "The Queen of Sheba," "When the World was Young," "Diamenê," and "The Ionian Dances." The latest picture thus represented is "The Message" (1897). The selection includes a spirited series of designs for the Ashanti War Medal of 1874, including both preliminary sketches and the design finally approved by Queen Victoria, and a good set of drawings for a silver ewer, embossed with the story of Psyche, intended to be carried out by Messrs. Elkington about 1877, but never actually made. There is also a little group of the studies in pencil or chalk of flowers, leaves, and birds, which it was Sir Edward's habit to make at odd moments and keep by him, classified, for use in the backgrounds of his pictures.

The Secretary of the War Office announces that a design of the Victory Medal—identical in its main features with that to be issued by the other Allied and Associated Powers for service in theatres of war, but different in its specific treatment of the subject—has been selected by a committee consisting of representatives of the Royal Academy, the Royal Society of British Sculptors, the British Museum, the National Gallery, the Victoria and Albert Museum, and the Royal Mint. The approved design was submitted by Mr. William McMillan, 14a Cheyne Row, Chelsea, who was also the successful artist in the competition for the design of the British War Medal, as was announced in May last. On the obverse of the medal there is a winged figure of Victory, full length and full face, and on the reverse the words "The Great War for Civilisation."

The Bromsgrove Urban Council again had before them last week the application of the Federation of Builders and their workmen that in future all the council's contracts should be restricted to members of the federation. Mr. J. Leadbetter moved the rejection of the application, which, he said, would mean that men who were not members of the federation would not have an opportunity of tendering for work towards which they and every other ratepayer contributed. The workmen were already protected by the wages clause which was inserted in all the council's contracts, and, moreover, the workmen's

powerful unions could take care of them without mixing up with the employers. The council had to consult the good of the whole community, and there was nothing worse for the country than big combines. Mr. W. H. Scott seconded, contending that the council should keep a perfectly free hand. Mr. J. Brazier, a member of the federation, proposed as an amendment that the application be granted. The employers, he said, were trying to work in union with the men, and the scheme was necessary if the men were to obtain certain conditions which they desired. The amendment was defeated by nine votes to five, and Mr. Leadbetter's motion was carried by a similar vote.

A second edition of "Limes and Cements," by Ernest A. Danecaster, is published by Messrs. Crosby Lockwood and Son, thoroughly revised up to date, with a separate chapter added on Portland cement. The first edition of this very useful manual soon ran out of print, and the present one will be welcomed by all interested in the important specialities it deals with.

According to a report of the New England Waterworks Association, satisfactory results have been obtained in America by treating water pipes with a Portland cement lining. It is stated that the water has no appreciable action on the cement, and the lining, if properly constructed, will last for an indefinite time. It is suggested that pipes should be seasoned six months before they are laid. This not only ensures better quality, but it has the effect of taking away the unpleasant taste due to cement when the pipe is first used. After the pipes have been lined for about a week, a thin grout is run through them. This has the effect of filling up any little porous places and of giving the lining a very smooth surface.

An emphatic protest against dilution in the bricklaying industry, which is characterised as "absolutely unnecessary," has been passed by the Executive Council of the Operative Bricklayers' Society. It is contended that there are roughly 55,000 bricklayers in Great Britain and Ireland. Taking 50 per cent. of these as available, and the average computed output of one bricklayer as six houses, the number of houses that could be built in a year is estimated at 165,500, or 51,500 in excess of the Government demand. It is asserted that during the past five years 20,000 bricklayers left the industry, because it did not provide a living for them.

The Bishop of Exeter, writing with reference to petitions for faculties to erect in parish churches memorials or rolls of honour of those who died in the war and those who voluntarily or otherwise joined the Colours, says: "The Diocesan Chancellor must refuse faculties to put up memorials on which the names of living men appear. The long unbroken tradition in the Christian Church should not be put aside, and if one living man's name was allowed to be put up, the Chancellor cannot refuse another, and the walls of churches would be covered with the names of men who perhaps were not nearer the fighting line than Rouen or Aldershot." The Bishop insists that faculties must be applied for in all cases.

A scheme for encouraging the building of houses in rural areas was put forward by Mr. C. C. Edmunds, estate agent to the Earl of Rosebery, at a housing conference at Leighton Buzzard. He asked the District Commissioner (Mr. F. M. Elgood) to sanction a scheme by which it would be possible to finance the small builder, or a combination of four or five workmen, for building rural homes. He stated that there were a number of these small men in his district in whom the local housing committees had every confidence, and who were fully prepared to get on with the job, if they could be given reasonable financial help. They would be untrammelled by restrictions on hours and output, and, as their profit would be greater the quicker the houses were built, rural homes would be up sooner in this way than any other. Mr. Elgood replied that sympathetic consideration by the Ministry of

Health would be given to any proposal that would bear investigation.

A paper on "Ancient Cottages and Modern Requirements" was read by Mr. A. H. Powell at a meeting of the Royal Society of Arts, over which Earl Ferrers presided, last Wednesday evening. Mr. Powell said a great many old cottages were of such a kind that their demolition or mishandling would be a serious national loss. The new houses would be just new houses; the old ones had for many generations been homes, and probably no country in the world could show in so small a space so great a proportion of ancient cottages, well built and beautifully gardenized, as England. They were our peculiar inheritance. Cottages that were again to be put to use must first be thoroughly examined, and each treated according to its need. None should be condemned to destruction that possessed an outer shell in fair condition, and, generally speaking, by-laws should be put out of the way in favour of local common sense—Mr. Bernard Shaw, invited to speak, said he was not at all sure that much mischief had not been done during his lifetime by the creation of a great deal of "literary" or "artistic" building. To live in a house made as dark as possible, and with the few windows stopped up with as much lead as possible, was like living in an architectural hell. He was so far from modern as to believe that every building should be knocked down at the end of twenty years, for we had an incorrigible habit of sponging on the past. "Look at the fuss we made during the war over Rheims Cathedral," he continued. "Any reasonable state of society would have said nothing, but would have got hold of more bricks and stained glass and built it again."—Mr. Powell said that then it would have become a picture palace.—Mr. Shaw replied that each generation should possess its own art. The worship of the past could be cured only by the wholesale destruction of the monuments of the past, to drive us, by a kind of starvation, to produce our own buildings. At present, after tolerating bad architecture all the year round, people went for a holiday in some old English village to see nice buildings at which there should be no need to look twice. "If we could avoid the loss of human life involved by war, I should be glad to have half a dozen more great wars, so that all the cottages and villages in Europe might be knocked down in order to force us to replace them," ended Mr. Shaw.

Major W. J. Travers, R.E., F.R.I.B.A., has been appointed deputy housing director and architect of Birmingham at a salary of £800 per annum. Major Travers is at present in the Army, but is about to be demobilised.

The Marchioness Anconati Visconti has fulfilled her promise to make a donation to the University of Paris for the purpose of instituting a Faculty of the History of Art and Esthetics, and has handed to the Vice-Rector, Dr. Lucien Poincaré, the sum of two million francs (£260,000). Premises are to be built at the corner of the Rue de l'Observatoire and Rue Michelet from plans chosen by public competition among French architects.

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TENDERS.

*Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

AYLESFORD.—For alterations and decorative works at Preston Hall, Aylesford, Kent, for the Council of Industrial Settlement. Messrs. Parnacott, 93, York Road, London, S.E.1, architects:—

Holloway Bros. (time 32 weeks) £14,460 0 0

Downs, W. (time 32 weeks) .. 14,123 0 0

Laurence, W., and Son (time 30 weeks) .. 13,861 0 0

Corben R., and Son (time 30 weeks) .. 13,860 0 0

Wallis, G. E., and Sons* (time 26 weeks) .. 13,719 0 0

*Accepted.

BARBY DON, DONCASTER.—For 60 houses and road works at Barbry Don, for the Doncaster Rural District Council:—

Lister, J. £43,860 0 0

Accepted.

BIRMINGHAM.—For 16 houses on the Fordhouse Farm Estate, for the City Council.—Recommended for acceptance:—

Boots, H., and Sons, Ltd., London, £811 to £819 per house, exclusive of cost of site. Also for 1,000 houses at Quinton, £823 to £832 per house.

BURNHAM, ESSEX.—For 20 houses, for the Urban District Council:—

Gould and Son £18,500 0 0

Accepted.

ELLSMERE PORT.—For 65 houses, for the Ellsmere Port and Whitby Urban District Council.—Accepted, subject to certain modifications:—

Gould £63,324 0 0

FARNHAM.—For erection of 34 houses at Farnham:—

Goddard and Sons (accepted). Average cost, including land, sewerage, etc., £972 per house.

FOLKSHILL.—For steel-framed factory, for Messrs. Pool, Lorrimer and Tabberer.—F. E. Tabberer, 18, Friar Lane, Leicester, Architect.—Quantities by J. T. Burt, F.S.I., 7, Pocklington's Walk, Leicester:—

Gray, J. E. £10,839 0 0

Jones, W. H., and Son .. 10,602 0 0

Kelley and Son 9,918 1 1

Isaac, W. J., and J., Coventry* 9,123 13 6

*Accepted.

LEICESTER.—For erecting a printing office in Forest Road, Leicester, for Mr. W. Binson.—H. Bland, Surveyor, 221, Fosse Road North, Leicester:—

Elliott, F. £3,385 0 0

Chitham and Co. 3,313 0 0

Dunbury and Sons 3,215 0 0

Potter 3,125 0 0

Bradford 3,027 0 0

MANSFIELD.—For sewage works extensions at Pleasley Hill, for the Town Council:—

Ashley, H., Mansfield .. £4,325 0 0

Accepted.

SEVENOAKS.—For 24 houses and making new road, at Sundridge, for the Sevenoaks Rural District Council.—P. F. Potter, 49, London Road, Sevenoaks, Architect:—

Strange and Sons, Sevenoaks .. £27,595 0 0

Cox Brothers, Maidstone .. 27,537 0 0

Dunnett, R., and Sons, Brasted 26,924 11 0

Wallis, E., Sevenoaks .. 24,196 0 0

Woodhams, J. L., and Sons, Bromley* .. 21,939 0 0

*Accepted.

TEDDINGTON.—For houses, for the Teddington Urban District Council:—

Jones, W., and Sons, 64, Victoria Street, Westminster .. £81,175 0 0

Accepted.

CHIPS.

Judge Greenwell, at Newcastle-on-Tyne, on Wednesday granted an ejectment order against a widow who rented a house at £30 and sublet it for £104.

Werrington, Northants, last week adopted a design submitted by the architect (Mr. Trayling) of a memorial cross, to be erected in the churchyard, facing the Green, at an estimated cost of £115.

The Federation of British Industries state that there is reason to doubt whether the increase in railway rates and demurrage charges is legally enforceable, and are taking further legal opinion on the point.

An altar and retables erected in memory of officers and men of H.M.S. Excellent Naval Gunnery School at Portsmouth who fell in the war were unveiled on January 15 in the church at the Whale Island school headquarters by Admiral Sir Cecil Burney commander-in-chief at the port.

A factory for the manufacture of cement from calcite and clay is to be put up at Beira, East Africa, by the Beira Portland Cement Company. The plant is to have a capacity of 7,000 tons a week, and will get its raw materials from the Silavu Hills, some 73 miles distant by rail.

The Wolverhampton Memorial Committee have decided unanimously that the War memorial shall consist of a memorial hall and a memorial intimately connected with the benefit of widows and orphans or other dependents of men who had fallen, the form of this to be considered by a special committee.

At a meeting of the Rochdale Housing Committee, last Tuesday night, Professor Abercrombie, the consulting architect, attended to discuss the question of concrete houses, some of which are being erected under his supervision in different parts of the country. No decision was come to, and it is probable that before arriving at any conclusion on the subject the specimen dwellings of this type will be visited.

The Rochdale Corporation have appointed Mr. J. A. Arden, deputy cleansing superintendent, Birmingham, to the position of cleansing superintendent, at a salary of £550 per annum. There were ninety-three applications for the post. The Cleansing Committee reduced the number of candidates to six, and this number was further reduced to two, viz., Mr. Arden and Mr. Crookes, and eventually the former was appointed by a small majority.

Yesterday week Mr. Thomas, the chief assistant to Sir Edwin L. Lutyens, who is now on his way home from India, attended a consultation with the Rochdale War Memorial Sub-Committee to discuss the four sites suggested and the nature of the design for the memorial. For the moment the question of site remains in abeyance. Meanwhile Sir Edwin Lutyens is asked to prepare three designs—one for the site facing the Town Hall, a second for the Slopes site opposite the Presbyterian Church, and a third for the Corn Mill site.

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AND ENGINEERING JOURNAL.

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OUR ILLUSTRATIONS.

New Hotel, Hyde Park Corner, London. Mr. Frank T. Verity, F.R.I.B.A., Architect.

Memorial Tapestry Hangings, Eton College Chapel, by the late Sir Edward Burne-Jones, Bart., and Mr. Henry Dearth. Executed by Messrs. Morris and Company, Merton Abbey.

Selected Design for the Housing Scheme, Selly Oak, Birmingham. Messrs. Ingall, Bridgwater and Porter, Architects. Plans and Elevations

Currente Calamo.

We hope some level-headed Scotsman at Paisley will ask Mr. Asquith whether he will, if returned, insist on the repeal of the disastrous clauses in Mr. Lloyd George's Finance Acts of 1909-10, for which, as Premier then, he was only less responsible than his Chancellor of the Exchequer. Mr. Asquith knows something about finance; and must, by this time, be fully aware that the increment value clauses have wrought more mischief than any similar legislation within the memory of any living; and are responsible almost entirely for the house shortage and for the present profiteering by the owners of houses. If his reply is in the affirmative, every sensible voter in Paisley will help to return him. If it is not, all his other claims are worth little consideration.

Wigan Town Council, last Monday night, authorised the Finance Committee to consider the question of the issue by the corporation of currency notes on the security of the rates for financing, without interest, house building and other undertakings which are of urgent necessity to the well-being of the people, and are not the means of making profit. The chairman of the Finance Committee (Conservative) moved as an amendment that the Government, within the shortest practicable time, should reduce the present inflated currency, restore the pound sterling to its par value, bring about a return to the gold standard, and promote a sound financial policy. The amendment was lost by 22 to 17, and the resolution was carried. We shall be curious to see what comes of it. "The idea," Alderman Fletcher, who moved the resolution, says, "is primarily an attack on the burden of interest." The method proposed seems to be for the State to sell new currency notes to the Wigan Corporation for house building or other purposes at merely the cost of printing, which Mr. Fletcher puts at 18d. a thousand. The notes would be expended in exchange for materials, and in wages, and so on. Every year the corporation would redeem part of the issue of notes. Thus in process of time Wigan might have had, say, £50,000 of notes; it would have paid £50,000 back, and notes to that amount would be destroyed. Nobody would be a half-penny the worse, but there would be standing as the result of this little finan-

cial arrangement a fine block of municipal buildings, or maybe a park or school. The capitalist would have been overthrown, for all this would have been done without recourse to borrowing and with no payment for interest. A similar scheme was tried in Guernsey from 1815 to 1837—successfully, so some of its chroniclers have declared, but disastrously according to its opponents. The objection seems to us that the builders and others who found material, etc., would exact higher prices, while the workmen who accepted them as wages would have to submit to a discount demanded by the tradesmen who supplied food, etc. But if Wigan avoids this and is successful we may try the idea ourselves, if our papermakers and printers are complaisant!

Those blessed words, "Alternative accommodation available," are likely to have a long run in the courts before their meaning is made manifest. They are from the latest of our makeshift Increase of Rent Acts, and describe what the judge is "especially" to consider before he can turn out a tenant within the Acts, after due notice, and give possession to a landlord who wants the place himself or for someone in his employ. They were dealt with by two judges of the High Court in the curious case of "Wilcock v. Booth." This began in the Barnsley County Court, where plaintiff, as owner, claimed possession of a house and shop in which the defendant, as tenant, lived and carried on business as a grocer with a beer off-licence. The plaintiff had bought the premises in 1918, and now wanted to live there and carry on business. She offered the defendant "alternative accommodation" in the way of a dwelling without any shop. Defendant declined to go: the County Court Judge held that the landlady must provide the tenant with a house and shop, and as she could not do so he dismissed her application as unreasonable. The High Court found themselves faced with a knotty point. If "alternative accommodation" meant what it seemed to say, it should include the shop by which the tenant got her living. As Bray, J. pointed out, it would also seem to cover a surgery and stable to a country doctor's house. But the Court felt bound to hold that, as the principal Act of 1915 clearly only applied to "dwelling houses," no

shop was included. So the case will go for a new trial before some other judge, and the County Court order for possession is rescinded. Yet we cannot see how, if a shop is legally outside this clause of the Act, any other view can be taken of the words "alternative accommodation," unless the tenant gets to the Court of Appeal, where they make sense of the muddle!

The new Increase of Rent Amendment Act of December 23 last has not been long in getting to the Courts, and raising some pretty problems. Indeed, the working out of this emergency legislation shows once again the rusty and creaking condition of our aged land laws. In the recent case of "Cottell and Baker, and Others," several pressing practical points were decided. The plaintiff was landlord of a house and shop in Mayfair, which he let to defendant Baker at a rent of £100 a year. He, in his turn, sublet all but shop, etc., to poorer tenants as separate rooms, and was getting in total rents of some £80 a year. His agreement provided that he should not underlet, as he did, without landlord's consent, but an old case had somehow decided that subletting parts of premises does not break this covenant. The subtenants, therefore, were not trespassers, as the landlord argued, though he knew of them, but were tenants in their own right, and so entitled to the protection of the Acts. The defendant Baker was not within the Act, as his rent was over £70, and an order for possession in favour of plaintiff, the landlord, was made against him as to shop and premises going with it. If he had come within the Acts then the Court would have considered whether or not he made an unreasonable profit by subletting, under the last Act. The judge, indeed, said that he should not consider this profit was unreasonable, because, though Baker got his shop rent free, he paid all the heavy rates and taxes. No order could be made in favour of the plaintiff landlord against the subtenants who remain. But he has now to face his purchaser and do what he can to defend an action for specific performance of his contract to sell with possession!

There can be no doubt that the appeal of the Duke of Connaught for a million pounds, wherewith to build a new central home of Masonry in London, will be

speedily responded to by the Craft. Masonry has utterly outgrown its historic home in Great Queen Street, and a new building worthy of its many benevolent expansions is an absolute necessity. There are 3,500 Masonic lodges under the English jurisdiction, and they may be depended upon to do their full share. But those who are not Masons have the right and duty to claim their share in the response to the royal appeal of the Grand Master, if only in recognition of the work of wise benevolence, including the Masonic schools for boys and girls, the homes for old people, the nursing home to take the place of the two hospitals maintained during the war for the care of the wounded, and other activities which stand to the credit of Masonry as brilliant examples of the luxury of doing good—a "luxury" indeed, which—*pace* Dr. Addison and his last new regulations—must not delay for a moment the scheme under consideration.

In a lecture last Wednesday week at Kentish Town, on "Art and Beauty in Actual Life," Mr. Edward Carpenter, speaking of the untidy appearance of many houses in London—windows broken, doors that needed painting, plaster fallen from walls, and so on—wondered why groups of two or three competent workmen did not go from house to house offering their services to carry out repairs. The capital required would be very little. But he was afraid that most British working people lacked the initiative to do anything until they had first found an employer to give them a job. Sir Sydney Olivier, who presided, warmly endorsed Mr. Carpenter's suggestion. He believed that in the present disorganised condition of the building trade there was a great opening for the associated activity of workmen. He had himself recently bought a house in a remote part of Oxfordshire. He found that it needed a good deal of repairing, but it would have been hopeless just now to try to get any builder to undertake work of this kind. With some hesitation—as he had to spend most of his time in London and could not often be on the spot—he engaged three local men to do what was wanted. He had been surprised at the high quality of the result, especially as regards the plastering, which showed a really high-class finish. Sir Sydney attributed the skill of these men largely to the fact that they had developed their own artistic ideas by working together—not following at one time the instructions of one architect or builder, and at another time the very different instructions of another.

At last week's meeting of the City Corporation the Lord Mayor reported the receipt of a letter from the Director of the Victoria and Albert Museum with reference to the caskets presented by the Corporation to eminent persons, and asking the Corporation to further the cause of the industrial arts by giving commissions of this kind to individual artists in preference to commercial firms. Mr. Hay-

wood said it would not pay artists to do work which the West End firms were prepared to do for the advertisement involved. The matter was referred to committee. Perhaps a return of recent sums paid per casket would be informative—particularly to the presentees! Are the caskets kept in stock, to order?

The Institution of Civil Engineers will introduce its Registration Bill in the next session of Parliament as a Public Bill. Registration is not to be confined to members of the institution, although every member will be placed upon the register, but any other person who complies with qualifications to be laid down by the institution will have a right to be registered. With regard to the special position occupied by members of other important societies, the Bill does not affect or interfere in any way with the rights they may already have to claim recognition as experts in the engineering activities especially fostered and promoted by those societies, and to use the titles and descriptions authorised by them—either alone or in addition to the title of "Civil Engineer" when that is claimed and established. The Bill contains provision for the insertion in the register of particular professional qualifications, but it gives no title beyond that of "Civil Engineer." Thus eligibility to register does not involve any obligation to become a member of the institution of Civil Engineers or of any other society. That is the right line to work on. Parliament is never likely to recognise membership of any one professional society as a qualification to register, and failure to see that in the past by the R.I.B.A. has been one cause of delay in the registration of architects.

Writing in *La Revue de Chimie Industrielle*, M. de Keghel describes some methods of manufacturing artificial marbles. He divides pseudo-marbles into two groups—viz., those with a base of sulphate or carbonate of calcium, and those having a base of magnesium salts. Very attractive imitations of white marble are obtained by the use of plaster, e.g., a compound consisting of 22 kg. of plaster (which has been heated to a temperature of 250° C. for 3 hours), 8 kg. of slaked lime, and 8 kg. of finely ground puzzolana, mixed with a solution of fluoro-silicate of alumina, so as to form a thin paste. This paste is then spread out flat on paper sheeting, after which it is worked up by the aid of the trowel into thin slabs of from 2 to 3 centimetres thick. By employing various tools working over specimens of real marble, designs are worked into the still wet surface by means of paste of similar composition slightly coloured with yellow ochre, ultramarine blue, etc., thus imitating the natural markings of real marble. The crystalline texture of marble is simulated by smoothing the surface of the slabs with the polishing brush, after having sprinkled them with powdered talc or mica. The slabs are then left to dry in air for from 24 to 36 hours. The pseudo-marbles thus obtained are described by the

Technical Review as light and porous, and are not suitable for outdoor work until, after hardening by coating the slabs with fluoro-silicates.

The present scarcity of building material has led to a new form of industry in Germany. At some large gas-works, notably at Heidelberg, Fürth, and Stuttgart, and other works where cinder or slag is produced, the manufacture of artificial building stone has been undertaken. The stone is produced in blocks of a convenient size, usually 10 by 12 by 25 centimetres. It is formed of a definite mixture of cinder and cement, with either sharp sand or limestone. Its resistance varies, according to the composition, from 20 to 50 kilogrammes to the square centimetre. Thus 1 cement to 8 cinder gives a resistance of 205 kilogrammes, while 1 cement to 6 cinder and 2 sand gives a resistance value of 51.5 kilogrammes. Commonly adopted proportions are: 8 parts of cinder sifted to 10 mm. size; $\frac{3}{4}$ parts cement; and $\frac{1}{4}$ limestone, which give a resistance of about 30 kilos., and sufficient for the walls of ordinary buildings. Only such cinder is suitable for this manufacture that has lain in the waste heap for a considerable time. Chemical action takes place in waste heaps, which action must be left to work itself out. This is especially important where sulphate of lime may be formed. The presence of magnesia is objectionable on the ground of its forming magnesium salts, which, being hygroscopic, tend to keep the walls damp. If limestone is used in the place of sand, it should be of an hydraulic nature. The sand should be clean—i.e., free from clayey matter. In some gas-works the manufacture is carried on entirely by hand labour, iron forms being used to shape the blocks. One man using these moulds, according to the *Technical Review*, quoting from the *Journal für Gasbeleuchtung*, can make in an eight-hour shift from 400 to 500 blocks. In from three to four weeks the blocks are sufficiently set for use.

None will regret the half-crown spent on a little easily carried in the pocket booklet by William Kiddier (London: A. C. Fifield, 13, Clifford's Inn, E.C.4). The true artist will find some useful hints, and all who really care for Art and its message to man—the only one with reality in these days of din of the shrieking shibboleths of the politicians and the rest of the paradoxists, and other pests of the time—will turn thankfully to the real gems of comfort that sparkle on almost every page; forgetting for a while the "man with the mind of the mocker and the stomach of the epicure who produces a book that is the snuff of him, or the remorseless dabbler that paints flesh and stain as his own affair," and remembering that "had it been possible to make desire sublime the devil would have done the work himself: it would have been his masterstroke." Further on, Mr. Kiddier says, truly enough, "the history of the world may be reduced to a few words: in the beginning it was a garden; in the

end it is a factory." Poor progress! but "still unaccounted there is a quantity called soul . . . the word *not* made flesh whose utterance is a war unto the ear of God."

FORTY-STORY FLATS FOR LONDON.

We confess—probably quite stupidly—to a considerable degree of sympathy with the motives which inspired Sir Martin Conway's plea last week at the London Society for the better utilisation of London as a home for the yearly increasing thousands whose daily task done therein is added to at both ends by the time and worry experienced in getting to and from it to their more or less comfortless abodes at ever-growing distances from London itself. Engendered by a continuous residence during the first twenty-one years of a fairly long life, our firm conviction is that the City of London is in every respect the healthiest and most convenient dwelling-place in England. To-day that is a luxury not easily obtainable even by the rich. Fifty years ago it was otherwise; and quite a respectable number of residents of all classes lived within the City precincts. We have the pleasantest memories of the comfort and convenience enjoyed in some of the big old houses that have long since disappeared, and of the good, wholesome air breathed in at the top stories, in which our sleep was obtained free from dust and undisturbed by the racket in the streets, and the noises through the thin walls of the adjoining houses which now deny that blessing to the residents in nearly every suburb. Never since have we been so well housed, and seldom in better company. Many of the London clergy lived close to their churches—one, the rector of a church about which a good deal is being talked just now, St. Mary Abchurch, had his quiet but comfortable rectory next door thereto, by the side of which at the corner of Sherborne Lane bloomed the "Parson's Garden," into which we often looked down with the envy of a town-child of the good fortune of those who could sit out amid the trees and flowers. The Dean of St. Paul's, of course, lived in his Deanery, still more "cribbed, cabined, and confined" than now, and his Sub-Dean in a pleasant house in Charterhouse Square, pleasant visits to which are still cherished. Clerical influences perhaps dictated the delight with which we have preached sermons to imaginary audiences from the pulpit in the private chapel of a big mansion in Laurence Pountney Lane, long ago demolished to make way for the demands of trade and commerce. Professional men of standing were to be found by scores in the quiet squares, and in Finsbury Circus, in two of the houses wherein, successively, it was our good fate to share the delights of the still well-preserved garden. Even the humbler but quite as useful citizens *had* to live in the City, including the members of the City Police Force, and other auxiliaries of its power and prestige. Whether they manage to do it still we do not know, but are very sure if, like ourselves, they have to pitch their nightly tent far away from the only real "home" left to the expectation of most poor pilgrims of our sort, they, too, have not joined in the diatribes of the critics who have downed Sir Martin Conway with their denunciations of his drastic desire to "knock down all the main streets, acres at a time, and in the great open spaces which would be left build the highest buildings it is possible to erect."

Surely, "the highest buildings it is possible to erect" need not necessarily be "forty stories high," nor hideous

architecturally? There is not a little to be said, aesthetically and practically, for the solidly-built flats that exist in Glasgow and Edinburgh, some parts of London, and almost all the great Continental cities. They offer opportunities for architectural treatment, for dignified façades and noble proportions, such as the cottage dwelling cannot supply. Run on the communal principle, with central heating, a restaurant, and a general domestic staff, they fill a want for which there is a great and growing demand, and one we earnestly hope to see realised. It is of course true, as Mr. William Woodward pointed out last Sunday in an interview with a representative of the *Observer*, that the height of a building should obviously for light and air and architectural effect have true relation to the thoroughfare which it fronts. The usual angle of forty-five degrees, which means that the height of a building should not exceed the width of the street, should never be disregarded. The Piccadilly Hotel, which Mr. Woodward erected in conjunction with the late Mr. Norman Shaw, is built within the limits prescribed by the Building Act of 1894—namely, eighty feet in height from the pavement to the parapet; with an addition of two stories in the roof, making the total height from the pavement level roughly one hundred feet. The effect can be judged by the public, and within such limits it may surely be possible to meet the demand for centralisation, which, as Mr. DeLissa Joseph insists in his very sensible letter in the *Times* of last Saturday, is rife, and the response to which would afford some relief to traffic, as there would be fewer people to bring in and out of town each day, while the increase in residential accommodation overlooking the parks would relieve the pressure on many of the outlying districts and do something towards solving the housing problem. The increased rating could be utilised, as he points out, as security for municipal loans, which could be applied not only to street widening, but to the financing of housing schemes on the outskirts; while the new residential blocks would enjoy beautiful views and secure to their occupants ready access to the parks. Tall buildings on the Embankment, north and south, the south being linked up to the West End by the new Charing Cross Bridge, would afford the much-needed additional accommodation for business purposes.

Anyhow, our belief is that very little more relief is obtainable from Garden Cities or Garden Suburbs, as so far established. It may be, as Morris suggested, that we are on the eve of a revolution that is to rend London into pieces and scatter its population abroad into more rational and moderately sized centres of life and work, leaving the capital to be rebuilt on more habitable lines, that shall give us the large open spaces and high buildings which Sir Martin Conway pleaded for before the London Society without protest from an organisation the main purpose of which is the beautification of London. Meanwhile, as the *Times* suggests, we should like to see an initial experiment made in the Whitechapel Road. At present its spacious width is its only recommendation. Add to its width height, in the shape of a number of blocks of high buildings, not in one continuous wall, but planted here and there at judicious intervals, and there is no reason why it should not become, as it is sometimes called, the finest street in London. Even with the number of stories restricted to twenty, many more Lon-

doners might have far more comfortable and decent quarters than the present houses can supply. Their tenants would enjoy the priceless boon of the green spaces to be laid out between and behind them, while the higher up they lived the purer the air they would breathe and the less they would be tortured by the ceaseless din of the traffic in the streets below. We think the success of such a trial would soon reverse the stream of home-seekers vainly seeking accommodation in far-away Garden Suburbs, and with advantage to all of us.

Our Illustrations.

HOTEL AT HYDE PARK CORNER, LONDON, W.

This drawing was exhibited at the Royal Academy Summer Exhibition, 1919. The work is intended to be carried out under the supervision of the architect, Mr. Frank T. Verity, F.R.I.B.A., of Sackville Street, W. The elevations are all in wrought masonry, as shown, but we have no further particulars.

MEMORIAL TAPESTRY HANGINGS, ETON COLLEGE CHAPEL.

The dorsale, or centre-piece over the altar of Eton College Chapel, designed by the late Sir E. Burne-Jones, Bart., was illustrated in the *Building News* for January 9, the subject being taken from the painter's "Adoration of the Magi." The two flanking tapestries in the same sanctuary, given herewith, were also carried out under the personal direction of Mr. Henry Dearle, by Messrs. Morris and Company. All three photographs of these hangings were exhibited at the Royal Academy War Memorials Exhibition during last autumn, and the pair reproduced to-day form memorials of Eton boys killed in the South African War. The angels ("Angeli Laudantes" and "Angeli Ministrantes") are based upon Burne-Jones' cartoons for Salisbury Cathedral, and were woven at Merton Abbey Tapestry Works.

SELECTED HOUSING SCHEME, SELLY OAK, BIRMINGHAM.

The plans and elevations given herewith show the accepted design in this recent competition. The lay-out suits the levels of the site and avoids unnecessary expense in foundations. The houses group round three sides of two squares. The larger houses occupy the most prominent position nearest to the road. Each house has a good garden. Twelve houses having three bedrooms and four houses having four bedrooms. The living-rooms have two windows giving cross ventilation. The sculleries are fitted with range, gas cooker, copper, sink, and draining board, and table, with space for mangle. In two houses the copper and mangle are in the covered way. Storage room for prams or cycles is provided under the stairs. Oversight of the garden is obtained from the living-room and scullery windows. All larders face the north, except two, which face east. In every house the principal bedroom contains not less than 160 square feet of floor area. In eight of the houses considerable economy has been exercised by reducing the area of the first floor, whilst still providing the necessary bedroom accommodation. The walls, in local red facing bricks, with Black Country facing bricks to plinth, quoins, oversailing to eaves and chimney heads. The internal walls are 4½ in. thick, with breeze concrete slab partitions between first-floor

rooms, where not over ground-floor walls. The roof of deal, covered with tiles. The floors to living-rooms, parlours, and bedrooms, etc., of deal boarding. Sculleries, larders, w.c.'s, and covered ways to have 9 in. red quarry floors. Coal-places have blue brick floors. The joiners' work and fittings are standardised. The cubical contents average 13,935 cubic feet per house. The architects are Messrs. Ingall, Bridgewater, and Porter, County Buildings, 147, Corporation Street, Birmingham.

COLOUR HARMONY IN DECORATION. By H. KEMP PROSSER, DR. CHROM., F.R.C.I. M.S.P.*

Most people have their own idea on the subject, but I think that you will agree with me that to obtain harmony, proportion of colour is the first thing to be considered. This is no new theory, for was it not Aristotle who said, "Colours may mutually relate like musical concords for their pleasantest arrangement, like those concords mutually proportionate"?

The doctor gives a prescription—it is the proportion of each ingredient which he considers. Should it not be the same with the decorator and his colour? The size of the room must be considered, and the quantity of colour used accordingly.

If I may still go further, might not the question of colour vibration be considered? A table of the contrasts of light wave length in centimeters in air and vibration frequencies of colour has been prepared by Rood Thompson. Remembering that light travels at 186,300 miles a second, the vibration frequencies of orange yellow, for instance, would be 510 million millions. The time may yet come when we shall use our colours in this way, for colour, like everything in the universe, is a matter of vibration, but more simple methods can be arrived at in order to produce harmony. The following methods are no new ones, but they are the safest to go on.

First, and by far the easiest, is through the use of tones of one colour, but by the use of such a method the decoration becomes monotonous; relief can, however, be given, especially in the use of grey, by the right proportional values of other colours in hangings, cushions and coverings. The second is by the use of complementary colours, or those which lie opposite each other. The third is by the use of colours lying next to each other.

The second method, which is that of the colours lying opposite each other in the colour scale, is more difficult, and unless worked out on a scientific basis discord can easily arise.

The third and most difficult is that of taking all the colours lying next to each other in order to arrive at a complete balance of harmony. If, for instance, one end of the scale is taken the result will be too cold; many rooms of the present day treated in blues and greys are condemned on account of their being both dull and cold. If, on the other hand, red, orange and yellow are used, the result is certainly too warm.

The only course possible is to use those that lie next to each other in the middle range of the colour scale, which are green and yellow. These should produce a harmony.

It would be most difficult and daring to design any decoration where the whole colour scale was used without producing the appearance of harlequinade colouring.

Therefore, the simplest and safest method is by the use of tones of one colour, with the introduction of two complementary colours, used in proportion.

It is important on taking a house to have at least one room in which harmony should be the chief consideration.

How seldom it occurs to the mind of one taking a house that there will be one room in which the largest proportion of their time will be spent. Accessories of colour must be considered in such a room, and the right proportional consideration given to them.

* From a Paper read before the Incorporated Institute of British Decorators.

It is the additions to such a room after it is finished without the thought of each coloured article that renders discord.

Things which are taken from their harmonious surroundings and placed in such rooms, china, for instance, and coloured glass, beautiful in themselves, are often discordant in the modern room, where harmony should be the first thought. One discordant colour spoils the harmony of a room, but if another is put near it the effect is broken and the colours put together make for harmony. This is why the introduction of coloured cushions in proportional quantities are useful in decoration.

In room decoration a central idea can be taken. It may be a Tudor room. It may be an opal room. It may be a red room; but it is necessary in all these ideas to work the scheme from a logical point. Does not the Tudor or Georgian period call forth primary colouring, and that of Louis XV. secondary, in order to render harmony? Reverse it, and discord will result.

Black and gold have lately been used extensively, but in the use of the former the effect has been heavy and sombre. It is possible to have a carpet and curtains black, and also the furniture and hangings. Yet by the right balancing of the colour proportions and a judicious adjustment of the relation between the background and the accessories, richness of colour quality can be obtained without any sacrifice of that charm or reticence which counts for much in domestic decoration. In many cases the striving after eccentricity has led the designer to create unpardonable discord. It is most necessary to understand the great importance of making a room a place in which to live.

It is also important to realise that harmony of interior decoration lies in the ensemble rather than in the units of beauty, and that black does not necessarily produce a funereal effect, but serves, on the contrary, as a most effective background for the notes of colour proportionately and advantageously placed.

It is most important to remember that the room in which we live must be worked out in a logical scheme of colour. Each must be carefully thought out and rightly balanced, which can only come by the right consideration of proportional principles.

Only by the exact adjustment of colour harmony can a room be presented as a colour composition.

I do not wish to go too much into the matter of colour therapeutically used, but I think that serious consideration ought to be given to colour used in this way in offices and workshops, in order that the employees are kept physically fit, and by which the greatest amount of work can be obtained with the least possible fatigue, which is equally desirable both for the employer and employee. I may mention that a scheme has already been taken up at Cardiff.

Having studied colour from the therapeutic point, let us consider it in relation to room decoration in regard to harmony and discord.

In the ordinary living room, taking the colours which lie near to each other in the middle range—blue, green, and yellow—such colours should harmonise, for they not only suggest life and sunlight, but space if treated with knowledge and proportionately.

Yellows are used to produce on the mind the sense of sunlight, yellow being the seat of light; blue, the vibration of the firmament; green, the early spring. Colours must live, so to speak; they must vibrate with life. All life is pulsation. Blue, again, is a favourite colour. An interesting fact is that it has a health-giving power not only on human beings, but also on plants. Flowers grown under blue glass greatly increase in size and vitality. Yellow is a strong stimulant.

Green, a combination of blue and yellow, should be so mixed that the proportion of each produces the green of the early spring bud.

A room treated in blue, green, and yellow in light proportions should produce harmony.

For the colours you use on the ceiling are also to be found on walls and woodwork.

It must be remembered that colours are divided into primary and secondary, and must be used in such way. Black and

white are not usually placed among colours, being positive and negative prospects of light. Tints and shades do not increase the number of the spectrum, but only show modifications of tone. These modifications are often necessary in dealing with room decoration, especially where large surfaces of wall and ceiling are concerned, in order to arrive at the colour proportion and obtain harmony of colour. Discord is often produced through ignorance or enthusiasm. Colour after colour is used, and perspective is not considered. The result is a mass of confused discord. How few people can visualise colour; hence the necessity of a scientific colour chart. Colour must be worked out according to its own laws, for there is no road to true harmony except through the laws of science. It is the same as all other sciences. Music is akin to colour. Both are based on the law of vibration, one of sound and the other of light. We must learn our colours as we learn our notes, until we obtain our full chords of harmony. Colour decoration can be worked in major and minor tones. Themes can enter into harmonious construction by the introduction of gold and silver. If we used and worked out our colour harmonies by those which appear in the spectrum, either by those lying next to each other, or through the use of different tones of one colour, or by the complementary colours lying opposite each other, we should at least arrive at more harmony, especially when we take a background of black and white, which, as I have mentioned before, are positive and negative aspects of light, and, therefore, not placed among the colours.

The use of the negative black was understood and appreciated by the Egyptians 2000 B.C., and long before that in India.

Each colour in the spectrum has its own purpose. Scientifically red has, I understand, proved to be the warmest, and changes less in light or dark than any other colour. Orange and yellow are warm colours. Green can be made warm or cold; this depends on proportions. Blue is cold. One important thing in using complementary colours is that they must be distributed. Pure colours can only be used in small proportional quantities, as they are strong and crude; in some cases, against a negative background such as black, they tend to show up, and must be used proportionately.

A decorator has much to contend with in designing a room in which the owner desires to hang all his or her pictures and other accessories. What is to be done? If harmony is desired black can be used, which is a negative, but few would allow this. White is chosen! What happens? Unless the pictures are high-toned, the positiveness of the white destroys the colour. At the Louvre are tinted walls of apricot. The mellowness of the old masters tones in with the walls and becomes a harmony, but what about the Cubist? And for the matter of that, most modern work? This colour would not hold good. The background in all cases must be as negative as possible, except in cases where the colours of the accessories are decided on before.

Mr. Jennings, who is a member of your Institute, delivered before the College of Chromatics a most interesting lecture on the Standardisation of Colour, and it would certainly be a real aid to us all if this could be established. In most cases we are calling colours by different names. The artist mixes his paints in a haphazard way, and we do the same with regard to decoration. We call it artistic, but is it logical harmony? In most cases proportional quantities and their relation to each other do not play an important part. We mix a paint near the colour, and create discord. To arrive at harmony, we must all have the colour standardised. We must all use the same. An interesting point came under my notice the other day. It is that of carpets made in Turkey only the three primary colours are used—red, yellow, and blue. They are invariable with no shades. It is considered impossible to carry out decorations in a European house with these crude colours. So shades of each have been introduced. England, France and Germany have each their own tones. Another point of interest

is that the three colours mentioned are boiled up to the exact shade and never vary. The laws of colour must be understood by those who proscribe it, realising the power of light. Considered scientifically, colour is but the breaking up of light waves. There are instruments which are known to scientists which tell the colour rate and length of vibration of each colour, and harmony can only be arrived at scientifically when these laws are understood, and colours used proportionately. When we arrive at this we shall be nearer the perfect harmony. It will then be easier to obtain satisfactory results in our public halls and buildings, and more especially in our national schools, where the science of colour could be taught.

R.I.B.A. CONFERENCE ON THE HOUSING PROBLEM.

The Council of the Royal Institute of British Architects have consented, at the request of the *Daily Mail*, to organise a conference on certain aspects of the housing problem, which will take place on the first three days—February 4-February 6—of the "Ideal Home Exhibition" at Olympia. Invitations have been issued to representatives of the local authorities to attend these gatherings, and as the Ministry of Health are anxious that there should be a full attendance of municipal officials and others interested in the housing question they have sanctioned the payment of the reasonable expenses of delegates of sanitary authorities attending the conference.

The exhibition will be opened by H.R.H. Princess Alice, Countess of Athlone, on February 4 at 3 p.m. The conference will begin at 3.30 p.m. the same day, and it is hoped that her Royal Highness will attend the opening meeting. Sir Aston Webb, P.R.A., will be in the chair, and Dr. Addison will deliver the opening address.

The programme for the succeeding two days is as follows:—February 5: 10.30 a.m., lecture on "The Financial Aspect of the Housing Problem"; 11.45 a.m., "The Difficulty of Obtaining Contracts"; 2.30 p.m., "The House Beautiful"; 3.45 p.m., "The Preservation of Old Cottages and Villages."

February 6: 10.30 a.m., lecture on "Difficulties of Transport and Materials"; 11.45 a.m., "Economies in Planning and in the Employment of New Materials"; 2.30 p.m., "Housing from the Working Man's Point of View"; 3.45 p.m., "New Houses and the New Social Order."

COMPETITIONS.

EASTBOURNE WAR MEMORIAL.—We are asked to announce that in response to the representations made by the R.I.B.A., the promoters of the Eastbourne War Memorial Competition have amended their conditions to bring them into accord with the Institute regulations; and the competition is now upon a satisfactory basis. The R.I.B.A. veto upon the competition has, therefore, been withdrawn.

Extension of the borough of Chesterfield having been approved by the Ministry of Health, it becomes in acreage the largest town in Derbyshire.

Room XXVIII. of the National Gallery has been reopened with a selection of pictures of the Spanish School, which includes a new example of El Greco's art in its latest period, an "Agony in the Garden," which was until recently in the Convent of Las Salesas, Madrid.

The Bolton Housing Committee have decided, subject to the approval of the Ministry of Health, to erect thirty-two concrete houses in the borough. Messrs. Dorman, Long's system is adopted, and application is to be made for sanction to borrow £19,168 for the purpose. Three women are to be co-opted on the committee.

Mr. George Souter, well-known in the North as an engineer, inventor, and artist, died on the 21st inst. at Elgin, aged seventy-four years. He patented several appliances in connection with the fishing industry, and laterly manufactured oil engines, which are well-known over Scotland. Many of his pictures are in the Royal Scottish Academy. Thrown on his own resources at the age of 13, he commenced work in a wool mill. He was a native of Forres.

THE ARCHITECTURAL ASSOCIATION.

A special general meeting was held at the Architectural Association, 34, Bedford Square, W.C., on Monday, the 26th inst., when the president, Mr. Maurice E. Webb, occupied the chair. After fifty-eight nominations for membership were placed before the meeting, and new members nominated at the previous meeting were elected.

The President explained that the meeting had been called for the purpose of bringing before members the Council's proposals for incorporating the Association, and proposed that the following resolutions should be adopted.

(1) That the Architectural Association become incorporated under the Companies Act in accordance with the memorandum and articles of association laid before this meeting, subject to such modifications as the Council may deem necessary and desirable, and that steps be taken to carry this out as soon as possible after a ballot of members has been taken.

(2) That the articles be so drafted as to allow of women members of the Association.

(3) That the Council be empowered to complete all details of the incorporation with the assistance of their legal advisers, and be requested to bring before the members such alterations in the by-laws as may be necessary.

He explained that incorporation placed the Association on a much more satisfactory basis than at present in many ways. It would relieve members of the Council from personal liability, and would also do away with the necessity of trustees, who had also accepted liabilities on behalf of the Association in the past. The trustees were Messrs. Arnold Mitchell, G. H. Fellowes Pryne, W. H. Seth Smith, and Henry T. Hare, and to these gentlemen the Association owed a debt of gratitude for the assistance they had given, and for accepting responsibilities from which the Council felt they should now be relieved.

The alterations to the premises at Bedford Square, which were nearing completion, would provide an opportunity for giving members advantages which the Association had never before been able to do on anything like the same scale. The school was in an extremely flourishing condition, and although the new studios were completed, it was found to be of the greatest difficulty to house the large number of students in the schools.

It was now hoped to do more for the general members of the Association, and he was glad to be able to announce that as soon as the premises were ready a dining-room, reading-room, and smoking-room would be at their service. The Association would develop into an architect's club, and he hoped that it would result in a large increase in the membership, for by that means funds would be obtained to carry on the work of education. To the older architects he would say, "You should join the Association in order to help the younger men," to the younger men "That they should join because the Association could provide advantages which they could not obtain elsewhere."

He felt he was justified in referring, with a certain amount of pride, to what the A.A. had done for the profession during the war. In the first place, it opened a War Service Bureau, which was responsible for placing upwards of 2,000 members of the architectural profession and building trades in the Army, in positions where their special qualifications were of service. Six hundred A.A. members joined the Colours.

An Active Service Committee was formed, under the direction of Mrs. Gervase Bailey and Mrs. Maurice E. Webb. This committee collected no less than £778, and with this money provided comforts to members of the architectural profession who were on active service.

The A.A. had its own Red Cross detachment from 1915 to 1919, with an average membership of seventy. This detachment did a considerable amount of work in connection with hospitals and air raid duties, and also in the transport of wounded, and pur-

chased an ambulance for its own use from the funds which it collected.

A drawing office was opened in 1914 for disabled soldiers who were not able to take up permanent employment, and in this office, in addition to other work, a very considerable amount was done for the Air Board. The fact that £665 was paid in salaries would indicate the extent of the Drawing Office activities.

At the end of the war the Association undertook the work of the Architects' Demobilisation Committee, and obtained the demobilisation of, roughly, 800 architects in the first two months after the armistice. It also obtained positions for 240 architects' assistants on demobilisation.

He had pleasure in announcing that it was proposed to hold a dinner on the A.A. premises on March 19, when the Right. Hon. H. A. Fisher, President of the Board of Education, had consented to attend as the chief guest. The Presidents of the Royal Academy and the Royal Institute of British Architects had also signified their intention to attend, and it was hoped that all the other architectural schools would be represented. In the following week there was to be a conversation or "house warming," and a dance for the younger members, and after this the premises would be thrown open as a general club. Referring to the resolutions which he now proposed to put before the meeting, he explained that in order to comply with the legal requirements, a ballot of members would be taken by post.

Mr. Stanley Hamp seconded the first resolution, and was supported by Mr. G. H. Fellowes Pryne and Mr. Arnold Mitchell.

The second resolution was supported by Mr. Gilbert Scott, by Mr. Knight Thomas and Mr. H. M. Fletcher, who stated that although women were admitted to the schools during his term of office as President, and the question of their admission to membership of the Association was discussed, it was felt that as the majority of members of the Association were away in the war, it would be better to leave this matter over until their return.

The third resolution was seconded by Mr. Ralph Knott. The resolutions were put to the meeting and carried unanimously.

Mr. H. M. Fletcher proposed a vote of thanks to the retiring trustees for their services to the Association in the past, and was supported by Mr. Ralph Knott and Mr. Francis Hooper.

The vote of thanks was carried unanimously.

The President then stated that he wished the meeting to discuss a proposed memorial to members of the Association who had fallen in the war, which he deeply regretted to state numbered 94. A proposal had already been put forward in the A.A. Journal, which was that the memorial should take the form of a library with a tablet commemorating the names of those who had been killed, and a drawing by Mr. Robert Atkinson designed for the library had been published. He felt that unless other suggestions were forthcoming the memorial could not take a better form than that proposed, and that there would be no difficulty in collecting from those interested the amount needed to carry out the scheme.

The proposal was seconded by Mr. E. Stanley Hall, Hon. Secretary, and agreed to. The President announced that an appeal would shortly be issued.

An exhibition organised by the British Institute of Industrial Art is to be held in London in April or May. It will include sections for manufacturers and for artist craftsmen. Exhibitions are also to be arranged for country centres and for abroad.

A War Memorial to the honour and glory of the men of Kimbolton who gave their lives in the Great War was unveiled by the Bishop of Ely on Tuesday week in the presence of a large assembly. The memorial, 17 feet in height, has been placed just outside the Parish Churchyard, and faces the High Street. It is of stone, and consists of a cross of 15th century design, rising from a carved stem mounted on a plain pedestal, upon which are recorded the names.

THE BUILDING GUILD AND WHAT MANCHESTER PROPERTY-OWNERS THINK OF IT.

Mr. E. J. Churchman, presiding at a meeting of the Manchester, Salford, and Counties Property Owners' Association in Manchester last Tuesday night, said that while it was impossible to criticise the scheme of the Building Guild Committee without knowing more details, sufficient had been published to make property-owners look askance at it.

The Operative Bricklayers' Society had declared that the rent for new houses should not exceed 10s. a week, that the Rent Restriction Acts should be continued until the supply of houses was equal to the demand, and that a full week's pay should be guaranteed to all building workers. The first two conditions must give property-owners concern. Would the bricklayer agree that his wage should be restricted, not to what it was before the war but to its present level, until the housing problem was settled? How would he take such a demand? Yet was it not reasonable that if the property owner was selected to make sacrifices until the problem was settled, the bricklayer should make his sacrifices too? The bricklayer and other building trade operatives were to-day better off than many hundreds of property owners. The Guild Committee were suggesting to the Irlam Council that the local authority should pay the wages bill, and that an addition of 10 per cent. should be made to make up for the guarantee of a full week's work and for plant, etc. Would the operatives have more regard for any agreements they might make as to house building than they had had for wages agreements, which, it was well known, they had not honoured in the past? Who was to set the pace in building—the man who would lay 550 bricks a day or the man who would lay 250? The scheme would be the most extravagant and expensive scheme of all, especially if rents were restricted to 10s. a week. Experience had shown that the direct employment of labour by local authorities was a very expensive method.

Every reasonable person must admit that during the abnormal conditions of the next few years subsidies would be required for house building, but he urged that in the interests of the State houses should as soon as possible be placed on an economic footing. This could not possibly be done until restrictions on rent were finally removed. The number of houses now falling into dilapidation through delay in doing repairs was much above the normal. The process would be arrested if the Government would allow an immediate increase in rent in proportion to the increased cost of repairs. If the owner carried out the repairs he ought to do not a penny would be left to him out of his rents. Mr. Churchman moved a resolution urging the Government to allow owners immediately to increase rents by not less than 35 1-3 per cent. on standard rentals, and where sentimental rents obtained in 1914 that the rent of similar houses in that district should be the standard rental.

Mr. C. F. Brierley seconded, and the resolution was carried.

A further resolution was adopted asking that the present notice of four weeks allowed before rents could be increased to cover increased rates should be reduced to seven days, and that the increased rent should be collected during the rating period.

Mr. J. Wigley moved and Mr. R. B. Batty seconded a resolution asking that where an authority changed an existing system of sanitation the consequent costs and charges should be borne by the authority.

Sir John Oakley, surveyor (of Messrs Daniel Smith, Oakley, and Garrard, 3 and 4, Charles Street, St. James's), heard the first case as arbitrator under the Land Acquisition Act, 1919, at the Surveyors' Institution on January 16, when Mr. H. A. C. Warrington, surveyor and auctioneer, claimed £8,500 compensation for the compulsory acquirement of his offices, 3, Arlington Street, Piccadilly, W., by the London County Council. The award was reserved, and Sir John stated that he would issue it as soon as possible.

MANURING FOREST TREES.

Many nurserymen and growers of ornamental policy trees, writes a correspondent of *The Scotsman*, have obtained good results from the use of manures. British timber growers, however, have done very little in the way of improving forest land by the scientific use of either farmyard or artificial manures, although the proper use of manures tends towards a great increase in the amount of timber produced. As a rule, land under trees or waste land which is being planted for the first time is not too rich, and can easily stand a certain quantity of manure. Poor, thin land, if properly manured, will carry a much better crop of timber than land of the same class which has not been manured. Up-to-date farmers and gardeners have greatly increased their crops by scientifically manuring the land. If farmers and gardeners can increase their crops by manuring the land, is there any reason why timber growers cannot also increase their crops by manuring?

FEEDING PRODUCTS ROOTS AND TIMBER.

That trees from the seedling stage upwards derive much benefit from an application of manure has been repeatedly demonstrated. The root is the underground part of the tree, and serves to hold it firmly in the ground, and to absorb nourishment from the soil for its support. Tree roots, like the roots of any other plant, are persistent searchers for nourishment. It is amazing how they will find out and greedily feed on anything nourishing, such as heaps of leaf mould or road scrapings. As soon as a root finds a good stratum it absorbs actively, and develops at the spot a great mass of fibrous rootlets. Moisture also stimulates root development. If for example, the root of a hardwood tree in particular obtains an entry into a water-pipe it will grow along inside the pipe for yards, develop a mass of rootlets and root hairs, and, unless the pipe is very large, it will finally close it up altogether, although the opening through which the root enters is no bigger than the hole in the shank of a tobacco pipe. In many nurseries in this country artificial manures such as bone meal and guano have been used with success.

Plants raised on a poor soil don't form a bushy root system, but usually long tap roots. The reason is that when there is nothing in the soil to feed on the plant does not require fibrous roots. If a plant with a bushy root system is put into a poor soil, it can do fairly well, as, having plenty of roots, it can seek out all the available food; but if a starved plant with bare tap roots is put into a poor soil, it will starve. So if a plant is properly fed and cultivated, it will have a mass of fibrous roots, which will enable it to hold its own later on. The writer has used a considerable amount of mixed leaf mould and sand with good effect in a nursery. Before being treated the soil was stiff, cold, and difficult to work; indeed, so stiff and unworkable was the soil that the formation of seed beds was impossible. A layer about six inches deep of leaf mould and sand was spread on the surface and dug in. After a few weeks had elapsed the soil was dug over again and thoroughly graped. Then the seed beds were made. They were sown with Japanese larch seeds, which germinated well. The seedlings were strong and well rooted, and after being lined out they grew into good plants. They are now in a plantation and doing well. When nursery soil is constantly cropped with trees, without any manure being applied, it, of course, becomes extremely poor. A good dressing of farmyard manure, and a change of crop, such as to potatoes or cabbages, for a season, will help to restore the fertility of the soil, and make it suitable for growing tree plants. Fresh farmyard manure should not be applied directly to plants, as it generally contains a quantity of ammonia, which is injurious to tree growth. A number of years ago the writer assisted with the planting of a portion of land in Argyllshire which was overrun with rabbits. This portion of land, a few acres in extent, was a sort of playground for hundreds of rabbits which lived in burrows in an old wood near by. A good rabbit netting fence was erected to keep them out, and good larch plants were planted on the pitting system. The soil was

of a good class, being loamy and fairly deep. However, the trees did not thrive for a few years. The failure of the plants to establish themselves quickly in such a good class of soil was doubtless due to the fact that the soil had been fouled by the rabbits, and contained too much concentrated organic material. Many of the largest and finest ornamental coniferous trees in the country have been regularly fed with well-rotted farmyard manure.

The most rapid growing spruce trees which the writer has ever seen are growing on a small piece of land which was taken off an old grass park. The soil is very rich indeed as it was for many years well manured with bullock droppings. This shows that trees will thrive well on heavily manured land. If the spruce trees continue to grow as they are doing they will give a good return, after allowing for the high value of the land, cost of plants, and labour. In case readers may think that this was an encroachment on agriculture, it may be pointed out that an area of woodland was thrown into a different part of the park.

CONTINENTAL TESTS.

Timber-growers on the Continent have for many years given attention to the manuring of trees. Probably the Belgians were the first to do experimental work. Other Continental countries had, however, taken up the matter many years before the war. In one case young larch, Scots fir, spruce, Douglas fir, beech, oak, and maple were experimented upon. All the treated trees showed a better root system and were larger than the untreated trees.

The composition of the manure is shown in the following figures:—

3.2 cwt. basic slag per acre.

1.6 cwt. kainit per acre.

.8 cwt. Chilean nitre per acre.

In another case experiments were conducted on six-year-old trees, many of which were on poor soil. Three sections in the forest were laid out for testing the value of manures, and were treated thus:—

1st section, no manure.

2nd section, 6.4 basic slag and kainit per acre.

3rd section, 12.8 basic slag and kainit per acre.

The results were as under:—

1st section made nothing after a year's time.

2nd section had done fairly well.

3rd section well repaid the double application.

The soil of an area near Munich had deteriorated and was almost abandoned, but as it was desirable to have it stocked, it was treated with slag, kainit, and Chilean nitre with good results. Instead of using Chilean nitre, in another instance a crop of lupins was grown. Lupins are capable of taking in and fixing free nitrogen from the air, and when dug in add this nitrogen to the soil. The effect of frost is counteracted by proper feeding. Treated trees are more able to recover from the effects of frost than are untreated trees.

Appointments to the post of Assistant Keeper and Librarian of the London Museum are not in future to be made by competitive examination.

Two hundred people living in flats at Vernon Chambers, at the corner of Southampton Row, W.C., have been given notice to quit. It is stated that as flats the property cannot be made to pay, and that the only solution lies in their conversion to offices.

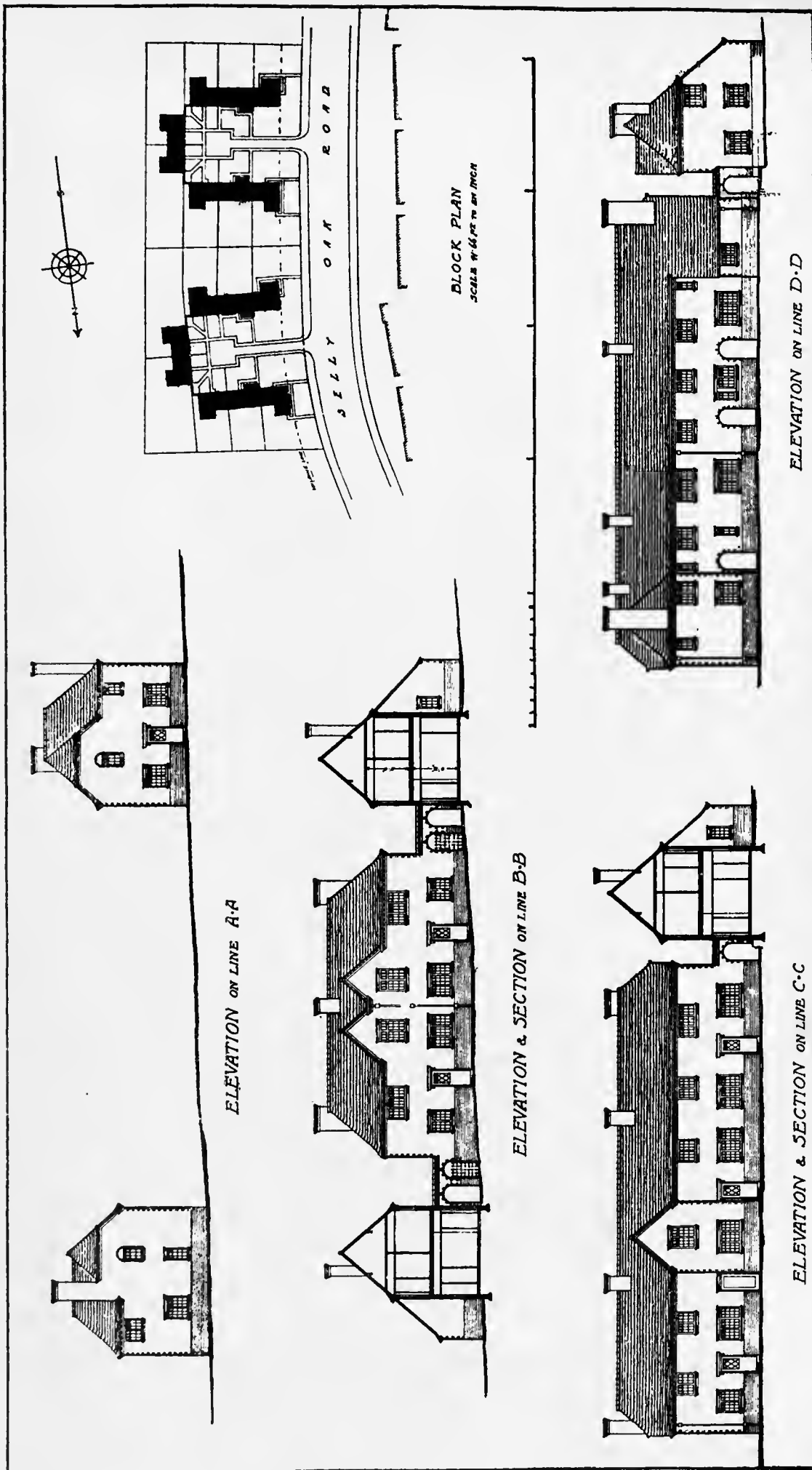
A message from Chamoniix states that French and Italian engineers have arrived in the town in order to study the ground and make all necessary investigations for the boring of a tunnel under Mont Blanc, through which a line would be run linking up France and Italy.

To perpetuate the memory of fallen officers and men of the 55th (West Lancashire) Division, numbering approximately 9,000, it is proposed to erect permanent memorials—one of a simple nature on the battlefield at Givenchy, and another of a more imposing character at Liverpool, the original divisional headquarters. Subscriptions are invited by Major E. V. Hemelryk, 7, Cotton Exchange, Liverpool.

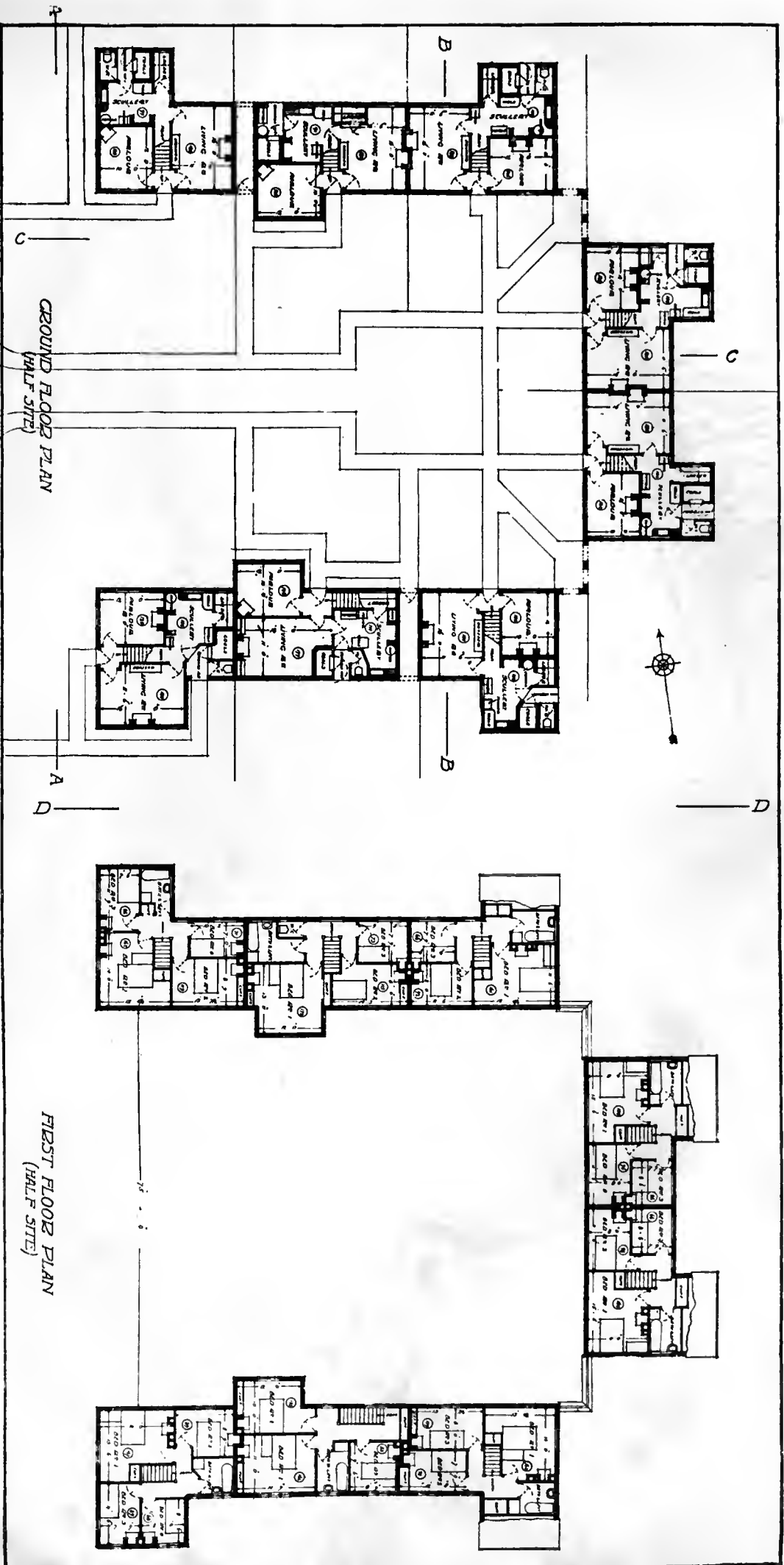


TAPESTRY HANGINGS, ETON COLLEGE CHAPEL.

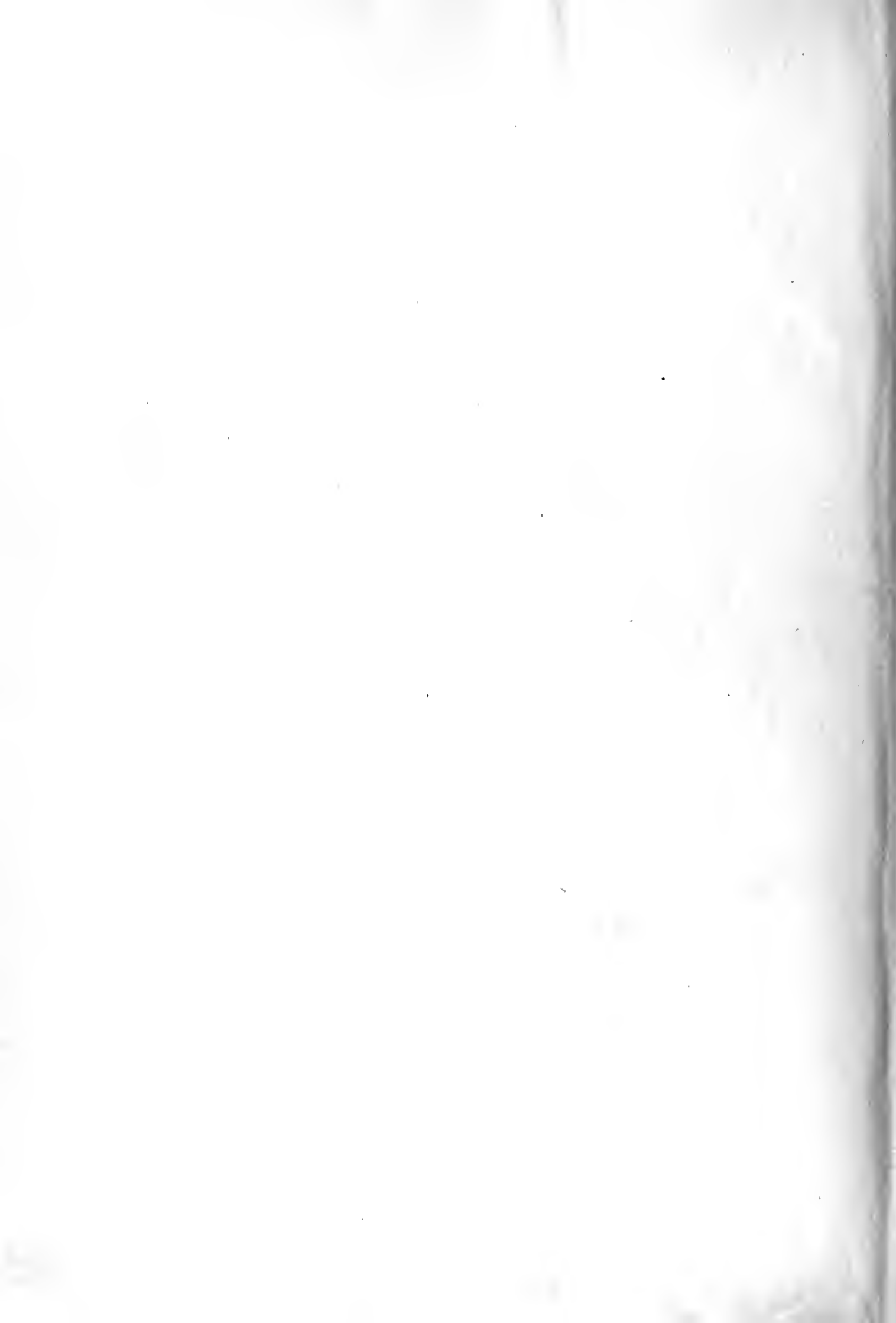
By the late Sir E. Burne-Jones, Bart., and Mr. Henry Dearle, of Messrs. Morris & Co.



SELECTED DESIGN, SELLY OAK HOUSING SCHEME COMPETITION, BIRMINGHAM.
Messrs. INGALL, BRIDGWATER and PORTER, Architects.



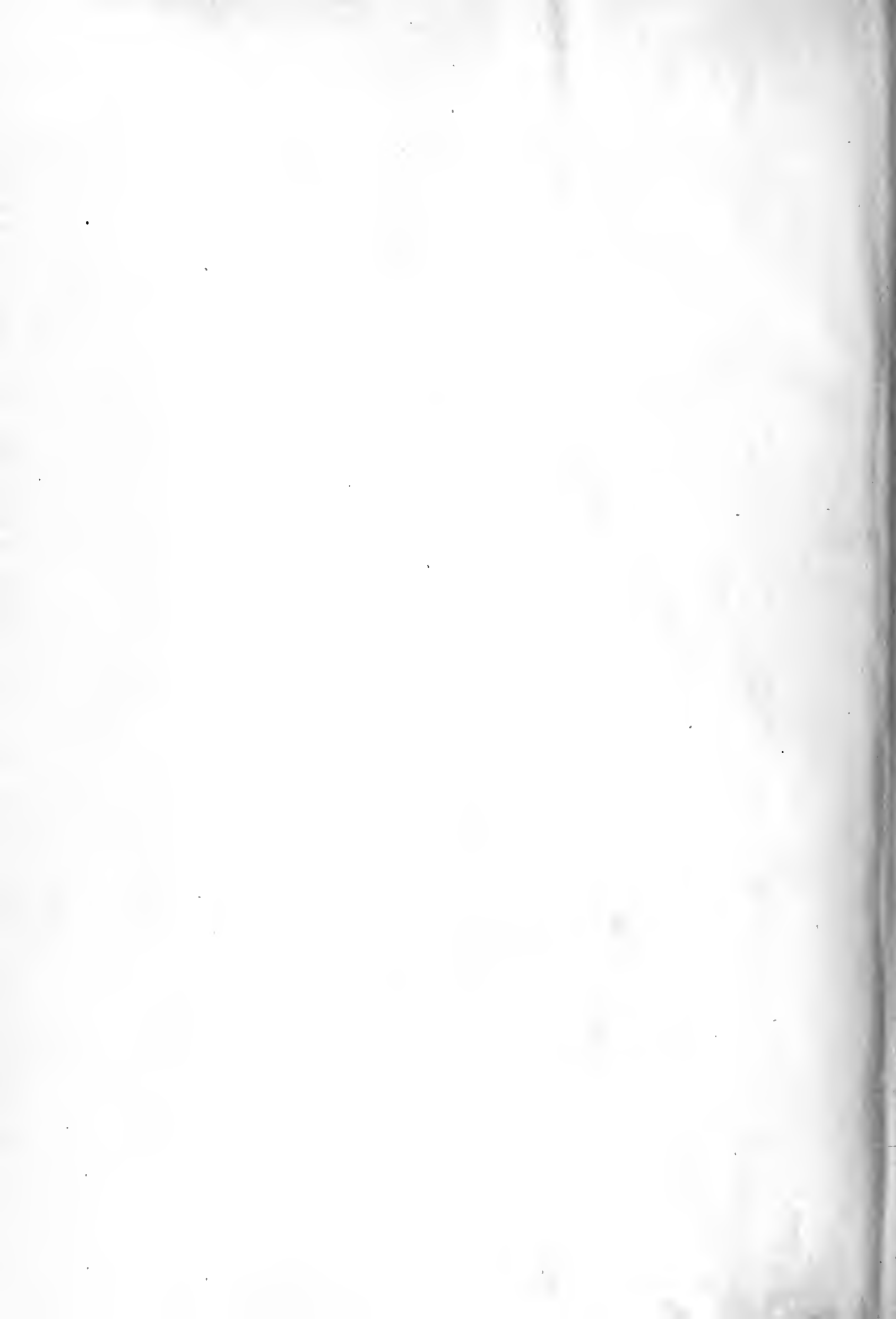
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TAPESTRY HANGINGS, ETON COLLEGE CHAPEL.

By the late Sir E. Burne-Jones, Bart., and Mr. Henry Dearle, of Messrs. Morris & Co.



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HOTEL AT HYDE PA
Mr. FRANK T. VER

NUARY 30, 1920.



NER, LONDON, W.
B.A., Architect.



THE NATIONAL FEDERATION OF PROPERTY OWNERS AND RATEPAYERS.

An important and largely attended conference and annual meeting of the National Federation of Property Owners and Ratepayers was held at the Midland Institute, Birmingham, last Friday, delegates from all parts of the country attending.

The Lord Mayor, who extended a civic welcome to the delegates, remarked that the Government had in past years passed certain legislation much to the detriment of private property owners. There was, he was glad to say, a tendency to alter some of the legislation, and to make it possible for property owners to pursue their legitimate business, because without such legitimate competition the country would be badly served. At the same time, he hoped the municipality would continue increasingly to be a property owner in right and proper competition to private property owners.

The report of the executive, which was approved, stated that such "Socialistic legislation" as Part I. of the Finance Act, 1909-10, discouraged investments in houses and land and cleared the road for municipal and State housing at charity rents. No reason had ever yet been brought forward why a working man should not pay the full cost of a tenement to cover himself and family. If labour was properly paid, why should it be bolstered up by State and municipal doles? The executive included among the objects of federation activity the removal of all unreasonable restrictions imposed during the war upon property and trade; the lifting of all unfair and oppressive burdens from land; and the freeing of the agricultural industry from oppressive regulations.

PRESIDENT'S ADDRESS.

Mr. A. W. Shelton (Nottingham), in his presidential address, said that the removal or drastic amendment of the land values duties (except the mineral rights duty), imposed under Section 1 of the "People's Budget," which he declared was the root cause of the present house famine, had been for years one of the main objects of the federation. Every day this legislation remained on the Statute-book tended to increase the difficulty of finding the best solution of the present intolerable position of the people. The result of investigation appeared to justify the assumption that, but for the baneful effects of the inclusion of the people's housing within the provisions of the "People's Budget," there would have been fully 200,000 additional modern cottages in existence at the outbreak of war than was the case. They would, but for legislative disturbance, in all probability have been provided by private enterprise at an average cost of £200 per house, including land, or, say, a total cost of £40,000,000, all raised from private sources. These 200,000 houses, in addition to the shortage attributable to the war, have now to be provided from public funds or subsidised by the State, which, taking the average cost at £800 each, represented a total sum of £160,000,000.

Amendment or repeal was absolutely essential to any scheme of finance for housing purposes, and equally essential in connection with the prevention of the calling in of mortgages affecting possibly six millions of the houses of the people, and representing probably £800,000,000. The time was fast approaching when the whole fabric of the unfair system of raising the cost of local services from land and buildings should be ruthlessly swept away in favour of a local income-tax, to which every wage-earner should contribute strictly in accordance with ability to pay.

On the motion of Mr. J. Wigley (Manchester), seconded by Mr. C. F. Brierley (Manchester), a resolution was passed recording the conviction that the required supply of houses to meet the ever-growing needs of the people can be secured only by first removing from the Statute-book all unequal restrictive legislation affecting dwelling-houses, and making such legislative amendments as will tend to restore public confidence in house-building as a safe investment.

It was also unanimously decided to appeal to the Government to alter the Rent Restriction Act and its amendments so that owners may immediately increase the rental by

amounts of not less than 33½ per cent. on standard rentals.

The conference appointed a deputation to wait upon Mr. Lloyd George to urge him to give effect to the foregoing resolutions.

THE WAYGOOD-OTIS STAFF.

STAFF DINNER.

An event of an unusual character took place at the Connaught Rooms in London on Wednesday, January 21, when the senior members of the staff of Waygood-Otis, Ltd., the lift makers, had the privilege of entertaining the directors and two members of the staff, Mr. B. P. Walker and Mr. T. Simmons, who had just returned from a journey to the States.

After the reception by the Chairman, Mr. George Martin, dinner was served in the Sussex Room. The toast of "The Guests" was proposed by the Chairman, seconded by Mr. F. Colebrook, and the reply was given by Mr. Charles Clarke, one of the managing directors.

The toast of "The Company" was given by Mr. Henry Lambie, supported by Mr. F. W. R. Scott, of Birmingham, and the chairman of the company, Mr. Henry Claude Walker, responded. Speeches were also made by the other directors present, Mr. D. W. R. Green (one of the managing directors), Mr. R. H. Thorpe, Mr. H. Harmsworth, and Mr. C. H. J. Day.

A very happy gathering was concluded by the toast of "The Chairman," proposed by Mr. A. A. Williams, of Leeds, and received with musical honours.

CHIPS.

A second and final dividend of one shilling in the pound is declared in the voluntary liquidation of E. H. Shorland and Bro., Ltd. The liquidator is Mr. J. W. Beever, 6, Princess Street, Manchester.

The "kitchen" of a primitive man has been found in a quarry at Achenham, Alsace, where the charred bones and teeth of several mammoths, wild horses, rhinoceroses, and hyenas have also been discovered.

A professor of the Petrograd Academy of Art, who has escaped, says the Bolsheviks have placed the whole domain of art under control of a council of seven, four of whom are apostles of Futurism. A uniform price of 7,000 roubles is paid for every picture accepted by the judges.

Mr. Howard Martin, surveyor (of Messrs. Thurgood and Martin, 27, Chancery Lane, E.C.), sat as Referee at the Surveyors' Institution on January 19, in the appeal against death duty by the Marquis of Abergavenny against the sum of £1,350, fixed as the value of the historic Lewes Castle, Sussex, by the Inland Revenue Commissioners. The Referee has fixed the value at £790.

Considerable progress has now been made in the work for the preservation of Stonehenge begun by the Office of Works about six months ago. Sir Cecil Chubb, of Salisbury, who presented Stonehenge to the nation in 1918, says many of the stones are in danger of falling. "They are propped up," he said, "but the props look unsightly, and if they rot the stones would probably come down. Therefore the stones are being put upright and carefully cemented in."

Mr. John Dibbles Craze, of Gloucester Place, Portland Square, W., founder and first President of the Institute of British Decorators, a Past Master of the Painter Stainers' Company, left estate of the value of £55,529, with net personalty £54,413. Testator gave his drawings and sketches of Italian coloured decorations and the scrapbook, containing sketches of ornamental and architectural details and four coloured drawings, to the Royal Institute of British Architects, and books and publications to the Palestine Exploration Fund.

The Building Acts Committee of the London County Council has extended for a further six months in each case the appointments of Mr. H. Lovegrove, District Surveyor for South Islington and Shoreditch, and Mr. Ellis Marsland, District Surveyor for Camberwell, each of whom has passed the retiring age of sixty-five years. Mr. A. W. Farmer's appointment as interim District Surveyor for St. George-in-the-East is also extended till June 20 next, on the understanding that its termination then or before will not be made the basis of a claim for compensation.

Correspondence.

BRICKLAYERS' OUTPUT.

To the Editor of THE BUILDING NEWS

Sir,—The Executive Council of the Bricklayers' Society, London, states that the rules of their society contain no reference to the number of bricks to be laid and that no canny method of output is practised. Will the secretary of this society be good enough to answer the following questions?—

1. Is it not a fact that fifteen or twenty years ago in this country 1,000 bricks per ten-hour day was the usual performance in the building of small houses, and for the present eight-hour day it ought to be 800?

2. Is it not a fact that in the United States, Canada, and Australia about 800 bricks per day are being laid at the present time?

3. Is it not a fact that the average number of bricks being laid to-day in this country is only between 200 and 300 for an eight-hour day?

4. Is it not a fact that in connection with the building of certain houses at Coventry at the present time the records show that only 120 bricks per day are being laid?

5. Is it not a fact that many devices are adopted by bricklayers to do useless operations so as to appear to be at work and at the same time to restrict output?

6. Is it not a fact that Mr. Grant has recently completed the first of the Birmingham Mail houses at King's Norton in four weeks during the worst time of the year?

7. Is it not a fact that in glaring contrast to this performance, the time taken for building small houses throughout the country is about three and four times as long?

8. Is it not a fact that if this greatly-reduced rate of progress is maintained the much-needed houses for the working classes will take three or four times longer to complete than is actually necessary?

9. Is it not a fact that in consequence of this reduction of output the cost of houses is proportionately increased, say, to the extent of at least one-fourth?

10. Is it not a fact that in consequence of the houses costing one-fourth more than is really necessary that the working classes will have to pay one-fourth more rent than would be the case if the building operatives did a fair day's work?

11. Is it not a fact that the 500,000 houses which are urgently needed, and which on an average will cost about £800 each, will cost £400,000,000, and that these ought to be provided for £300,000,000, or a saving to the country of £100,000,000, which amount is being paid for work which has not been performed by the building operatives?

12. Is it not a fact that the number of men engaged in the building trade at the present time is greatly reduced from the number employed before the war?

13. Is it not a fact that the Bricklayers' Society is restricting the number of apprentices instead of assisting to make up this shortage?

14. Is it not a fact that they are putting every obstacle in the way of the employment of men who have been wounded in the war and are now being taught branches of the building trade by the municipal authorities?

I hope the Secretary will realise that the foregoing questions are not only put in the interests of the public, but for the benefit of the bricklayers themselves, as it is well known that in consequence of the cost of bricklayers' work becoming almost prohibitive numerous substitutes are being introduced into the market which must ultimately tend to the offacement of the bricklayers' trade.—Yours, etc., ENQUIRER.

Ashton-in-Makerfield's housing scheme is to cost nearly £850 per house for eighty houses. The lowest tender originally was for £1,100 per house, but the scheme was modified to bring down the cost. At a meeting of the District Council on Tuesday the scheme was adopted, after some criticism of the Government's policy. The Chairman (Mr. E. Welford) said the Government had blundered all along the line.

Our Office Table.

The very serious collapse of a reinforced concrete roof last Friday morning at Birmingham resulted in the deaths of five workmen and serious injury to eight or nine others. The building is a large rectangular garage that Messrs. John Barnsley and Sons were constructing to the plans of Messrs. Peacock, Bewlay and Cooke, for Messrs. Easton, Lloyd and Co., to the contract of Mr. O. C. Hawkes, and is situate behind the tall buildings which form Broad Street Corner. It has a frontage of about 75 ft. to the wharves at the rear, and is composed of three floors, being between 30 and 40 ft. in height. Some days ago the roof, which is flat, and made of reinforced concrete a foot or more in thickness, was completed, and last Friday morning between twenty and thirty workmen were engaged on the floor beneath it at plastering, painting, and other work to complete the premises for occupation. It is stated that shortly after eleven o'clock "a dull rumbling noise" was heard, and that the deceased man Preece, who was foreman of the work, detected something amiss with either the scaffolding or the roof itself, and gave orders for the fault to be rectified. It was while a gang of men were performing this work that the catastrophe happened. The cause as yet is unknown. Mr. Cooke, the architect, states that the catastrophe may have been due to a variety of causes. Sir John Barnsley, the building contractor, is also at present unable to offer any definite explanation of the untoward occurrence. The outcome of the investigation will be awaited with anxious interest.

Last Saturday the London Rambling Society, conducted by Mr. A. H. Blake, spent several hours in visiting some of the interesting old houses in Soho Square. It was stated that Marat, the revolutionary leader, was once a medical man in this neighbourhood, but his house was not discovered. The lodgings occupied by De Quincey before he wrote his "Confessions" are untraced, and are about to be sold. The visitors, however, thoroughly explored the fine old House of Charity, with the beautiful decorations for which the eccentric Alderman Beckford is supposed to have been responsible; and Sir Joseph Banks's house, now packed from floor to ceiling with valuable antiques. At St. Patrick's Church the society were shown a few relics of the notorious Mme. Cornelys, whose dancing hall once occupied the site, and who ended her life of gaiety in the Fleet Prison.

The Royal Academy is preparing a scheme to promote three architectural studios, one at the London University, Gower Street, one at the Architectural Association, and another to enlarge the scope of the existing "First Atelier." The course of studies proposed is broad, and allows for a period of tuition covering five years. It is hoped to encourage the study of architectural design and all that pertains to real building amongst advanced students and possibly architects already in practice. Special lecturers are to be appointed in the various branches of architectural construction and studio work. Large monetary prizes are to be awarded. When this scheme is started a link between the training of the assistant and the practising of architecture, hitherto missing, will have been established. The Atelier system has long been favoured in France, and recently in America, and its establishment here under the auspices of the Society of Architects has done more for architecture, and on the right lines, than most other attempts of the kind.

Inquiries are being made by some London borough and district councils, which have a Labour majority, to ascertain how far working arrangements can be completed for Labour to be employed direct on housing schemes. What is known as the Manchester Guild Scheme may be adopted. The possibilities of the scheme are to be discussed at a national building trades conference at Manchester next week. The Building Trades Federation are of the opinion that, with ample materials and nothing to interfere with working conditions, over 50,000 houses can

be completed annually, apart from repair and reconstruction work.

A scheme is almost ready to be launched at Wrexham for the industrial training of about fifty discharged disabled soldiers in the craft of wood turning, machine working, cabinetmaking, and joinery. The training is to be given in that portion of the Corporation's depot which was used to such good purpose in the making of shells, and in the course of the next fortnight the protracted efforts of the local Technical Advisory Committee of this branch of the building and furniture trades will materialise in the shape of a well-equipped workshop for the purpose of putting a new trade into the hands of men whose campaigning disabled them from resuming their pre-war occupations. The local Technical Advisory Committee is composed of representatives of employers and workmen engaged in the trades concerned, and a syllabus has been framed with the object of enabling the trainees eventually to qualify for entrance into those trades as skilled workmen. It is further hoped to add upholstery and French polishing to the course.

Vickers' News, the admirably-produced medium of communication with their friends and clients which Messrs. Vickers, Ltd., of Broadway House, Westminster, S.W., are now sending out fortnightly, is by far more interesting than half the magazines published, and any of our own readers who have not already seen it should send for a copy. The pre-eminence of the great firm in concrete machinery is doubtless familiar to all of them, but there are other matters amongst the many covered by Messrs. Vickers in which they are equally so, and about which it will pay all architects and builders to learn more. No. 7 of the *News*, which has just reached us, is a specially interesting issue, with its portraits of the leading members of the staff, and the fine coloured illustration of one of the great Australian line steamers the firm is now building.

From statements which have been made it would seem that some members of the Ministry of Health and of local authorities are under the impression that architects are so busy with other professional work that they have no time to devote to housing schemes. The Society of Architects points out that so far from this being the case there are plenty of well-qualified architects, particularly ex-Service men, who are looking for housing work, and who are only too anxious to obtain it. Acting on information received as to the treatment meted out in some cases to ex-Service candidates for housing appointments, the Council of the Society of Architects has unanimously passed a resolution expressing the opinion that, other things being equal, ex-Service candidates should receive preference for housing and other appointments open to qualified architects, and the necessary steps are being taken to bring this resolution to the notice of those concerned.

In a paper on "Tropical and Sub-Tropical Diseases," read in London on Tuesday, Dr. Louis W. Sambon referred to the question of plague and rat extermination, and said he had little faith in a general crusade against rats. Experience had shown that it was practically impossible to exterminate them. The more one killed the faster those remaining bred, as better and freer conditions of life were open to them. Something could be done by destroying all refuse and placing food in rat-proof buildings and receptacles. Many animals had died out simply through a change in their environment, and this could perhaps be done for the rat by a change in our architecture, making it impossible for it to secure a home in our buildings. The ancients got over the rat difficulty by keeping harmless and rat-eating snakes, cats, and other natural enemies, and a similar method had been employed in California to stamp out a pest in the orange orchards. Something on similar lines might be employed here with advantage.

It was decided on Tuesday at the meeting of the London County Council to appoint deputations to wait on the Ministry of Health and the Ministry of Transport con-

cerning the scheme which the Council have in hand to provide further housing accommodation for the working classes of London at Dagenham. It was stated by the Housing Committee that the transport of the building material required for about 24,000 houses on the proposed Dagenham site would involve much organisation, and special arrangements must be made for the conveyance of such material from railway depots, and possibly from the riverside wharves. Mr. Pinkham alleged that contractors were making extraordinary profits, in some cases as much as £200 and £250 per house. Mr. Holland, the committee chairman, said that as far as his experience in London went, he did not think undue profit was being made. The evidence which he had was in the opposite direction—the contractors were making a bare profit, if any.

It was reported on Tuesday at a meeting of the Housing and Estates Committee of the Birmingham City Council, presided over by Councillor George Cadbury, jun., that good progress was being made with the schemes for the provision of houses in the city. An offer to build ten houses in Church Road, Erdington, was accepted at the contract price of £800 per house. It was decided to purchase an available building site in Goosemore Lane, Erdington, and to permit a local builder to erect forty-two houses thereon at an early date at an approximate cost of £872 per house. The offer of a builder to erect six houses at the corner of Church Hill Road and Whitacre Road, Bordesley Green, at £825 per house was approved, and so was an offer to erect twelve houses in Solihull Lane, Hall Green, at a cost of about £790 per house. The committee agreed to purchase land in Colonial Road and Whitacre Road, Bordesley Green, for the erection of a number of houses, and they resolved to continue the building of houses by Messrs. Roberts and Son on the Billesley Lane estate, an offer to erect a further 22 houses at £825 per house being accepted.

The site of the birthplace of Oliver Cromwell at Huntingdon was sold by public auction last Saturday for £2,800.

Judge Bryn Roberts, at the Rhyl County Court last Friday, ordered the tenant of a bungalow at Meliden to give up possession thereof in twenty-one days, on the ground that it could not be said that a seaside house was a necessity—it was a luxury.

Mr. E. R. Smith, District Surveyor for West Wandsworth, who has been permitted by the London County Council to retain his chair as Professor of Architecture, first at King's College and later at University College, has notified the Council that he has retired from the latter.

New housing schemes submitted to the Ministry of Health during the week ended January 17 numbered 170. The total number of schemes submitted by local authorities and public utility societies is now 8,122, comprising about 59,000 acres. The schemes approved now number 3,746 (32,750 acres). Seventy-six lay-out schemes were submitted and eighty-three approved during the week, making the total number of lay-outs submitted 2,253 and the number approved 1,532.

Formal sanction has at length, after much delay through official red-tapeism in London, been given to Wallasey's first three housing schemes for the provision of a total of 210 dwelling-houses. The original estimate for the expenditure on the whole 210 houses, including land, buildings, sewers, street works, and draining, was £143,795. The total cost to-day will be approximately £200,000. The net receipts from rents will amount to little more than half the charges on capital outlay.

Mr. Thomas Boynton, F.S.A., of Bridlington, Yorks, a prominent antiquary, who discovered the Ulrome (Holderness) Lake Dwellings in 1880, and owner of a collection of ancient pottery, weapons, and antique furniture, who died on November 1, aged eighty years, has left estate valued at £75,698 gross, with net personality £70,507. By his will, with a codicil, he expressed the desire that the executors should give to the British Museum certain of his articles of English pottery, "which I intend to enumerate subsequently in a codicil." No such list is, however, among the documents admitted to probate, nor is it embodied in the codicil.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

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Mr. George P. Bankart, Architect.	

Strand, W.C.2

The Bush International Sales Buildings, Island Site in the Strand, London. Bird's-eye view of the three blocks and a detail of the main portal on the north front. Messrs. Helmle and Harvey W. Corbett, Architects.	
299, Oxford Street, London, W. Mr. Delissa Joseph, F.R.I.B.A., Architect.	
Back of "Greenland Fishery," King's Lynn, Norfolk. Sketch by Mr. R. Scott Cockrill, Architect.	

Corrente Calamo.

At the Society of Architects, 28, Bedford Square, London, W.C.1, on Thursday, February 12, at 8 p.m., a paper on "The Starting Point for London Developments" will be read by Mr. G. A. T. Middleton, which will interest all concerned in regard to the solution of one of the most pressing problems of the time. Nearly ten years ago a scheme was propounded by Mr. G. A. T. Middleton for linking up the City and the West End of London by converting the present loop line of the S.E. and C. Railway from Cannon Street to Charing Cross into a high-level roadway, and establishing a new combined terminus station on the south side of the Thames. Since then public discussion has focussed upon Charing Cross Terminus, and the demand for its removal across the river has grown until it is well-nigh irresistible, and several methods by which it might be accomplished have been put forward. Profiting by these and by the criticisms passed upon his original idea, and taking into consideration many changed aspects of the problem, Mr. G. A. T. Middleton, while adhering to the general lines of his first scheme, has modified it in detail, and hopes to show that it would be a practical and profitable undertaking in spite of the great cost involved, that all the great interests concerned would be benefited, and that it would solve many of the most pressing problems of London traffic and development.

Liverpool, having been asked by the Government to build fifty or one hundred houses by "direct labour," has gone into the matter, and found it would cost as much to put down plant for 100 as for 400, and so has determined to quadruple the job, supply all the material, find the labour, and do the whole job from start to finish. "It is no part of the Housing Committee's intention to take over a private enterprise," says Alderman Harford, the deputy chairman of the committee. "That is not the spirit in which we are embarking on this experiment. As the Corporation will own the houses, it is quite in line with democratic principles that we should put ourselves to the test

as builders, the same as any other big landlord or large employer might. All sorts of experiments are being made with new materials in building, and when the job is our own job it is just as right to experiment with new methods as with new materials." Four hundred houses on the Larkhill estate are involved in this interesting proposal, but on what is virtually the same estate 1,000 houses of similar type are to be erected by the municipality by two firms of private contractors. Mr. James Townshend, a Liverpool builder, has been chosen by the committee to take charge of the building operations, in which direct labour is to be applied. He will work under the supervision of Mr. F. J. Badger, the director of housing. We shall watch the results in both cases.

Some very useful letters have appeared during the past week or two in the *Times* condemning the "knock-out," a reprehensible custom which prevails more widely at auction sales than some think, and certainly keeps private genuine buyers away from sales. One of the correspondents says:—"There are some thousands of men throughout the kingdom who make a handsome living in that way, and there are probably extremely few sales where they are not to be found. Last year a certain article was put up for auction by order of a public institution, and, although valued by a so-called 'expert,' was sold at such a figure that three dealers knocked out £80 each over it. It is only a few years since that, over a piece of tapestry, some £10,000 was divided after the sale in London. The auctioneers are certainly not to blame, as it is to their interest to obtain the highest price from the company present; but, as a rule, they are not experts in the values of goods sold, the bidding being chiefly in the hands of the combinations of dealers. It seems a pity that the Chancellor of the Exchequer does not avail himself of a 5 per cent. commission upon all auction sales towards the relief of taxation and the redemption of the colossal War Loans—2½ per cent. from the seller and the same amount from the buyer would not hurt anyone. Ten per cent. is customary in France and other countries, and is paid by the purchaser to the State."

The first part of a very interesting illustrated article in the *American Architect*, on "Roosevelt and the Fine Arts," by Mr. Glenn Brown, F.A.I.A., is prefaced by an appreciative note by Mr. Cass Gilbert and supplemented by another by Mr. Irving K. Pond, who incorporates some personal reminiscences. Thanks to all three, and to the tact and goodwill of other members, the relations between the ablest of America's recent Presidents with the representative body of American architecture, and architects generally, seem to always be characterised by appreciation and encouragement. "He was," says Mr. Pond, "the first President of the United States in seventy-five years to place, throughout his administration, culture and broad civilisation on a par with politics; even as ameliorating politics and assisting statesmanship. Emerson's *Seyd* 'thought it happier to be dead, to die for beauty, than live for bread.' Somewhat of that characteristic quality was in Roosevelt. His record shows that he was willing and eager to fight for that beauty and order which were as much to him and which he felt should be as much to a great people as were bread and the material things for which men so strenuously battle. And I am proud to have been a member of the American Institute of Architects, which during his time of stress ministered gladly and helpfully to his cause and received his heartfelt commendation."

At the door of the "unprincipled newspaper," which with sensational scare heads tells its story of strike, murder and riot, Mr. Harry Blenderman, of the great firm of Fred T. Ley Co., Inc., New York City, lays the responsibility for the fomentation of a great part of the present industrial disorder. Such papers, he says, so lacking in any moral responsibility, have invested the otherwise sane and industrious labourer with a belligerent spirit. One strike, properly advertised, is, in the judgment of Mr. Blenderman, strong enough to damage materially all industry. One gang of labourers, seeing another gang making demands, decides that it will do the same. A succession of strikes and riots is inevitable, therefore, when newspapers feature all lurid details. So continuously are his elemental emotions played upon that the labourer has been encouraged to assume

a fighting attitude. "Once he has tasted blood he cannot be satisfied except with blood." Through his taste for power coming to him as a result of the labour shortage created by the war; through the activities of a few conscienceless fire-brands who have continually preached the exploitation of labour by capital, and through the conscious or unconscious encouragement offered his excessive demands by a sensational Press, the labourer has himself become conscienceless, and is fast losing all desire to share either industrial or social responsibility.

STRUCTURAL STEELWORK.*

We have read this solidly useful manual of 462 pages with considerable satisfaction, and confidently recommend its acquisition and perusal to every architect and engineer. We have more than once expressed our surprise that, apparently, so little is known even about the ordinary general problems of structural steelwork, not only by architects and engineers, but by approving authorities, whose regulations not only bind the designers of structures, but set a pernicious fashion to others called on to do so, and so continuously multiply risks of a formidable character, while they seemingly ignore others. We have, for instance, repeatedly come across cases of the kind instanced by Mr. Beck on page 129 of stringent requirements imposed by approving authorities with regard to framed enclosures as compared with their lack of interest in the huge expanses of glass so common nowadays in modern shop-fronts. One would have thought it apparent to any one of average intelligence conversant with the matter that, in a steel-framed building, the shop front and the framed enclosure differ, as regards function, only in that the former is required to be transparent, while the latter is not; and that, indisputably, this does not affect the question as regards relative stability. The gales of the past fortnight in London, even in exposed positions on the northern heights, have once again shown that windows, even of considerable size, and possessing no visible means of support, are seldom broken by wind-pressure—surely an evident if silent comment on the authorised estimates regarding the intensity of wind-pressures. But when a window is broken, as Mr. Beck says, no one seems much alarmed. The glazier comes along, sooner or later, and fits a new pane, usually of no greater strength than the displaced one, without any requirement by the authorities to insert a system of steel trussing, while the possibility of a panel or two of a framed enclosure being blown in seems too horrible a thing to contemplate even for purposes of research and demonstration. It is quite possible, of course, where one must submit to official requirements, to comply economically therewith by adopting special methods of meeting the needs of particular cases, and Mr. Beck clearly and correctly indicates methods such as diagonal bracing, partial bracing, and knee-braces, which may be advantageously used without making the stanchions very large and heavy.

Throughout the volume we are glad to note that, as in the foregoing paragraph quoted, Mr. Beck's endeavour has been to make it broadly suggestive rather than particular or exhaustive, and to adduce

common-sense lines of argument based upon straightforward consideration of the facts, and not merely to formulate specific relations or to dogmatise from details which cannot be more than typical. In regard to deflection in beams and girders, we have not infrequently been told that close calculations for the determination of deflections, and care in design to keep deflection down to a minimum, are not necessary, and that, provided the stresses are kept within the accepted limits, incidental matters like deflection may be left to take care of themselves. We are glad Mr. Beck, on page 202 *et seq.*, exposes this error clearly and convincingly, indicating accurately the ways in which the deflections of the individual members of the structure may affect the distribution of the loads and stresses over the whole structure to an extent the importance of which certainly can hardly be exaggerated. That this is recognised by all the leading Building Codes, the deflection of any girder being limited to a small fraction—in most cases to one four-hundredth of the span. Of course, what we all have to bear in mind, as Mr. Beck points out, is that in the old style of building with brick walls which resist overturning by reason of the stability due to their weight alone, it was sufficient that a girder carried a load safely over a space between supports. But in the modern framed structure such certainly is not the main function of a girder. It must directly assist in the transmission of all loads to the foundations, and should be so designed that the stresses induced by the actual loads are not increased in transmission more than is absolutely unavoidable. We regret to know of more than one steel-framed building in the design of which the words "absolutely unavoidable" have been far too liberally and consequently dangerously interpreted!

We are glad to see that Mr. Beck, on page 236, deplores the diversity of opinion among authorities about the magnitudes of the loads which should be provided for with different kinds of roof coverings, purlins, etc., in regard to which, after much controversy, the loads are still prescribed by some authorities as much as a hundred per cent. in excess of those laid down by others, and this for buildings to be erected within a radius of a few miles. There is certainly much room for research in connection with this most important element of structural design, but it must be on lines truly representing the conditions under which actual structures work. Much of the "research" of the past has, in our own opinion, been empirical in the highest degree, and we hope any of our readers likely to help hereafter to sounder and safer conclusions will read Chapter VIII. of Mr. Beck's book carefully—we are sure they will do so profitably. As also his remarks in the following section on wind-loading, about which much difference of opinion exists, most of it due, in his judgment and in ours, to one root cause—the failure to recognise the fact that air is not an incompressible liquid, but a highly elastic gas. If, as most of us know, in a practically incompressible liquid like water, there is nearly always a variation of pressure from maximum down to zero, and indeed sometimes to a vacuum, how much more variable must be the effects in an elastic gas, like air, with its enormous differences in density, its local currents and eddies, the "dragging" due to the friction between it and the earth's surface, the deflections of motion caused by hills, valleys, trees, buildings, etc., and the countless other influences which vary

too rapidly, and are, at any rate as yet, insufficiently understood to be taken into account mathematically. Truly a reliable and justifiable estimate of the loads imposed on a sloping roof surface is not the easy problem many of us seem to fancy!

Among many other most useful features we should like to draw special attention to the well-conceived attempt in Chapter II. to present section modulus, moments of inertia, and radius of gyration in a form which, though not less logical than that usually employed in text-books, will enable any ordinary student to visualise them. We think he will—perhaps for the first time—get a clearer comprehension of the whole matter after reading pages 27 to 34 than he is likely to have been assisted to before, thanks to Mr. Beck's lucid explanations and careful diagrams.

Practical advice is given whereby steel structures may be made of satisfying appearance, and so possess a dignity of their own, without any sacrifice of practical and commercial suitability—indeed, it is shown that there is good reason to regard an ugly structure as *ipso facto* ill-designed—while the too-often ignored fact that the ability to produce steel structures that are tasteful (in the best sense of the word) is a commercial asset, is illustrated and emphasised. The numerous thoroughly typical examples from actual practice—all fully worked out by means of simple arithmetic and commonsense argument—should supply a widespread need; while the many working drawings, accompanied by full calculations and designs, cannot fail to prove of real practical assistance. The problems of manufacture, transport, and erection are discussed from the practical and commercial standpoint, while many valuable time- and labour-saving devices are given, which will be found extremely useful to draughtsmen and designers.

With final congratulations to its author we conclude with an expression of satisfaction that in a second volume it is his intention to deal with some of the more general problems occurring in engineering structures.

ROYAL ACADEMY EXHIBITION.

(Opens May 3, closes August 7.)

NOTICE TO ARTISTS, 1920.

1.—TIME FOR, AND MODE OF, SENDING IN WORKS.

All works intended for the annual exhibition of the Royal Academy must be punctually sent there on one of the days fixed for their reception. These days this year will be:—

Water colours, pastels, miniatures, black-and-white drawings, engravings, and architectural drawings, Friday, March 26; oil paintings, Saturday, March 27, and Monday, March 29; sculpture, Tuesday, March 30.

No work will under any circumstances be received before or after these specified dates.

All works must be delivered at the Burlington Gardens entrance. None will be received at Piccadilly entrance.

Hours for the reception of works, 7 a.m. to 10 p.m.

All works sent from the country or from abroad must be consigned to an agent in London for delivery at the Academy, unpacked, on one of the appointed days. Account should be taken of the present difficulties of transit. No works in cases will be received; nor will the expenses of carriage be defrayed by the Academy. The attention of foreign artists and of English artists residing in the country and abroad is especially called to this regulation.

No photographing or copying of works will be permitted on the premises of the Royal Academy.

2.—MODE OF DESCRIBING WORKS.

All the works sent by each artist must be entered on a printed form duly filled in

* "Structural Steelwork." By Ernest G. Beck, W. & A. Assoc. M. Inst. C.E. (London: Longmans, Green & Co. 21s. net.)

with the name (Christian and surname in full, signed by the artist) and address of the artist, the titles and description of the works as they are to be inserted in the catalogue, and the price, if it is desired to place them on sale. These forms must be sent under cover addressed to "The Secretary." No advertisement, unnecessary quotation, or narrative can be admitted.

At the back of each frame must be written the name and address of the artist, with the title or description of the picture, and the number (if there be more than one) to which it refers in his or her list. This information must also be repeated with great distinctness and accuracy on a label securely attached by a string to the top of each frame, and made to hang over in front, as also to each piece of sculpture.

It is necessary that these regulations, more especially the last, should be strictly complied with, in order to avoid delay and inconvenience, as well as inaccuracy in the catalogue.

The forms and labels can be procured (during the month of March only) from the Academy. Applications for them made by letter must be accompanied by a stamped and addressed envelope for their enclosure.

3.—NUMBER OF WORKS ALLOWED.

No artist is allowed to send or exhibit more than three different works.

4.—SIZE OF FRAMES, MARGINS, ETC.

Each picture or drawing must be in a separate frame, or if a series of drawings from one story be at any time admitted in the same frame, they must be enumerated as distinct pieces. A case of sculptured gems will be considered as one work, provided the size of the case does not exceed 6 in. by 5 in.; and a case of metals or plaques, each of which is not more than seven inches in its widest dimensions, will be considered as one work, provided the size of the case does not exceed 3 ft. by 4 ft. Miniatures must be in separate frames, uncased, and enumerated as distinct pieces.

All pictures and drawings must be in gilt frames. Miniatures in frames set with jewels are inadmissible. Oil pictures must not be sent in under glass, but any roll picture not more than 30 sq. ft. superficial measurement obtaining a place on the line may have a glass put over it if so desired on an appointed day before the opening of the exhibition, of which due notice will be given. Excessive breadth in frames or margins, as well as projecting mouldings, may prevent pictures and drawings obtaining the situation they otherwise merit. The frames of engravings and of works in black-and-white must not exceed 1 in. in breadth. Oval frames should be avoided, as they are difficult of arrangement. Reliefs should be framed.

Small photographs of architecture and architectural sculpture not exceeding "half-plate" size will be admitted, but only in connection with working drawings and included in the same frame. Good geometrical drawings of moderate size are desirable. Architectural drawings which are the work of an artist other than the designer must have the name of the draughtsman clearly inscribed on the mount, but the draughtsman's name will not be included in the catalogue.

5.—WORKS INADMISSIBLE.

No works which have been already publicly exhibited in London, or which have not been executed within the preceding ten years; no copies of any kind (excepting paintings in enamel, and impressions from unpublished medals, in which case the name of the original designer must be specified); no mere transcripts of the objects of natural history; no realistic models of ships or of other inanimate objects, except architectural models of buildings; no vignette portraits in oil; and no engravings or etchings that have been published six months, can be received.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

On Monday evening the R.I.B.A. prizes were presented by the President (Mr. John W. Simpson) at the meeting held at No. 9, Conduit Street. Previously to making the presentation the President delivered an address to the students and others assembled, and Mr. Arthur J. Davis made a short speech criticising the drawings submitted. These were exhibited on the walls.

The formal business having been transacted, the President, in his address, said that they were all students, and it was no light thing to address his fellow-students—age brought doubt as well as confidence. Having spoken of some of his own early experiences, he continued: "These reflections bring to me a doubt I have often expressed, as to whether our narrowly specialised education in art is not radically unsound. Why is it we no longer find among us men who are adepts in painting or sculpture, or both—to say nothing of the *Ars Poetica*—as well as in architecture? Since the three sister arts demand in all essential respects the same attainments of manual skill and appreciation of beauty, joined with the poetic and creative temperament, a common initial training is surely indicated for the study of all three. This, which in my student days was impracticable, owing to the prevalent and time-honoured system of apprenticeship to a single master, would now mean no more than a fusion of the schools that have become as general for architects as for painters and sculptors; and this, as I believe, to our advantage. The elements of technique, such as the handling of material—paint, clay, or what-not—and the habit of mind which enables the artist to realise and design a cube object in plane projections, are best taught in a school. The master engaged in the practice of his art has long forgotten, in the course of daily use which has become an instinct, the difficulties he experienced in acquiring his facility, and the way in which he learned it. The beginner can only wonder at his dexterity without appreciating his qualities, and he himself is out of touch with the tyro's troubles. There are, of course, men who take infinite trouble with their pupils, but this is, as it were, the cracking of nuts with a steam-hammer. In a school all the elementary difficulties are constant, and both teachers and students ascertain quickly the readiest means of surmounting them; proceeding to successive stages of interest wherein practice brings improved technical ability. An active emulation, too, is far more keenly developed where many are working than where there are but one or two; and students learn more from their own mutual failures than from the teachers' instructions. My choice, therefore, for the budding artist is a school rather than apprenticeship; and I would have students begin, each and all, with the representation of existing objects in geometric projection, in plastic material, and in line and colour. Having attained, in each method, some satisfactory degree of proficiency—whether tested by formal examination or not is unimportant—they would move into the class of design. There they should practise the elements of composition, rendered, as before, in the medium of each of the more important materials pertaining to the three great art divisions with which they are concerned. Here we may leave them, for the present, to reach a certain standard of ability. Already there will have been a weeding-out; some at any rate, realising their small chance of becoming reasonably efficient, and adopting other pursuits. The survivors will have found, by actual experience, the medium in which they can most readily express their ideas; and proceed, as now, to the higher technique of the art for which they are best qualified. The architects will have gained freedom and courage in the handling of mass, the others will be the better sculptors and painters for such glimmering as they may have caught of the suggestive beauties of a fine plan. Now, though I have praised the school as most valuable in the early stages of our professional training, I would also warn

you not to mistake the means for the end; not to stay there too long. If you remain all your life you will still not have finished your education in our art. Therefore, so soon as you have acquired fairly good technique, hire yourself as assistant or 'improver' to a practising architect, and get to work on actual buildings, no matter how small or unimportant. I remember, when first I came to London (with the usual bundle of drawings under my arm), calling upon a well-known architect. He received me kindly, but, 'My dear fellow,' he said, 'I have little use for highly qualified assistance; so much of my work is mere building, not architecture at all!' I beg you not to accept any such fallacy. All building is architecture, however simple it may be, or appears to be. Some of it, we know, is very bad; that is the fault of the designer; there is always opportunity for doing it well instead of badly, and, it is more than likely, of saving your client's pocket at the same time.

The President contended that the tendency of modern educational methods was to prolong the period of training, and he had himself but just suggested a change which would not tend to shorten it; but it was a question for grave consideration whether prolongation of school training was justified by its results when tested by the meter of economic production. It was curious to see how much earlier than we our forefathers set about the active exercise of their professions. Elmes was but twenty-one when he took the competition for St. George's Hall; Pugin, when he died at forty, had already built sixty-five churches in the United Kingdom alone, to say nothing of those in the colonies, besides monasteries, convents, and schools, and his work at the Houses of Parliament.

Turning to another subject, the President said he had thought of devoting part of his address to "rectangles and whirling squares," but discussion would be untimely on the present occasion, and, perhaps, later on Professor J. Hambidge—whom he was delighted to see present—would himself expound his theories to the Institute.

Reverting then to his original theme, the President said that architecture was an exacting mistress, who would tolerate no rivals, and students must beware how they took her to themselves if they had not the strength to be faithful. Like a mistress, her pleasure was capricious; therefore, they should not be discouraged by disappointment, for when they expected it least she would show her tenderest favour.

Sir Edward Busk moved a vote of thanks for the address. He said there was considerable consolation in what the president had said. For many years past he had deplored the passing of apprenticeship, and thought it a great loss to crafts, and possibly to arts; but the president's arguments had convinced him that if there had been a loss in that direction there had been a considerable gain in the change of system from that of the instruction by one master of one pupil to that of the schools where many pupils were taught by many instructors. The newer method had many advantages: there was a spirit of just and chivalrous emulation among the students of a class; and each student mingled with others who were not engaged upon the same subject as himself, so that he learned that the occupation he had chosen was not the only legitimate source of distinction. The London University had felt that architecture ought to be treated in an academic manner, and had established a school of architecture at University College, Gower Street, where the students were in close connection with the students of drawing, painting, sculpture, and engineering. Considering the enormous amount of varied knowledge which an architect should possess, there was an additional advantage in his studying with these other students. The architect had to know a good deal of mathematics, although mathematics would not enable him to produce a work of architecture; and he had to understand various materials and meet difficulties due to soil and climate. In this last connection he might say that Chicago was situated on a kind of swamp, where all buildings were

The Incorporated Institute of British Decorators meets at Painters' Hall, Little Trinity Lane, on Tuesday next, February 10, 1920, when a paper will be read by Mr. Paul Waterhouse, M.A., F.R.I.B.A., on "Happy Bondage." The chair will be taken at 7.30 p.m.

erected on concrete rafts or floats. In one case where an architect was submitting plans he was asked whether he could not save something on the foundations. "Yes," was the reply, "but the result would be that in ten years' time you would be able to step straight out of your twentieth floor." (Laughter.) When all had been done by the school, the pupil so prepared must continue the study of his profession; otherwise he would never be able to produce a work of art. The building should express a thought. That must be brought about by the individual growth of the young man's mind and genius, and by catching inspiration from those about him.

Sir Stanley Leathes seconded the vote of thanks, it was heartily accorded, and the President replied.

Mr. Arthur J. Davis followed. He said that it was with a certain amount of hesitation he had accepted the Council's invitation, for the critic's task was hardly a sympathetic one; it must seem to the student that 'he critic demolished in a few moments the result of months of patient toil. The most important competition in design in England was undoubtedly the Soane Medallion given by the R.I.B.A., and great distinction attached to the student who won it. The problem set this year, a bridge over a wide river, might appear to some a purely theoretical subject, hardly ever likely to be carried into execution; but in Europe to-day there were very few large towns or capital cities where such problems were not being studied, and he would like to congratulate the Council on having chosen a programme with a distinct element of modern town planning. The traffic problem was the all-important one, and the plan both of the bridge itself and its approaches must be such that it solved the traffic problem without congestion and in a direct and straightforward manner. The winning design, that of Mr. Shoosmith, emphasised many of these essential points. The more important roads converged naturally to the bridge entrances. There was ample space for vehicles to cross and recross, and the buildings which formed the vista at the end of the bridge were well designed for the purpose. Moreover, they were skillfully built, their mass design did not throw the bridge out of scale, and they were not designed as independent groups without relation to the bridge. But it was a pity Mr. Shoosmith had added a perfectly unnecessary feature which went far to destroy the essential qualities that had been alluded to. The triumphal arch which spanned the roadway at one end of the bridge would make a bottle neck for traffic during busy hours of the day. Mr. Shoosmith showed two sections through the bridge, one with the triumphal arch and one without; the latter was preferable. It might be urged that such arches were features of all ancient bridges; but in that case they were purely military structures erected for purposes of defence. They were not required in modern design. If a triumphal approach to the bridge was essential pylons could be put on the side of the entrances, as in the Pont Alexandre in Paris. After the traffic problem the next important consideration was the view of the bridge from the river and side embankments. Most navigable rivers were valuable thoroughfares, and, with the development of the motor in connection with water transport, might become the means of relieving the congestion in the streets. The programme stated that the width of the river to be spanned was 800 ft.—an important water thoroughfare—and the maximum number of arches was five; the competitors did not seem to have considered whether a bridge with fewer openings would not be a better solution of the problem. The approaches from the bridge level to the quayside were a vital feature; in the case of the winning competition the masses of steps leading from the upper to the lower quays, if introduced, should discharge on a quay four or five times the size shown. These steps were out of scale with the remainder of the composition. Generally speaking, in designing bridges broad masses should be retained to harmonise with the flowing horizontal lines of the water. In the case of a design which had received honourable mention, a great deal of consideration had been given to the problem and

an interesting set of drawings had been produced; but the solution of the traffic problem and the general lay-out was not nearly so successful as in the case of the winning design. The traffic was brought safely over the bridge, dropped into a decorative pond, and its subsequent course was not easy to find. Too much importance was given to the buildings and not enough to the bridge; but this might be the fault of the programme, which was rather vague. The scale of the bridge was small and the shape of the arches not so pleasing as one would expect; the access to the lower quays was insignificant, and the buildings, which had occupied the larger part of the architect's attention, were themselves open to criticism; for the hard vertical masses of the towers conflicted unpleasantly with the horizontal lines which the author had rightly thought should dominate the design, and the scale of the buildings was so large that it dwarfed the bridge itself. Further, semi-circular buildings adjoining a quay were unsatisfactory.

As to the Tite prize, the programme in this case might have been more definite. The prize had been deservedly won by Mr. P. H. Meldrum with a drawing showing considerable merit. The very word "loggia" suggested a southern climate, and it was permissible to introduce a style such as had been successfully evolved in southern countries. It should be realised that a loggia should be sheltered, protected, and so designed as not to obstruct the views of the garden. In this plan the niches shown were rather monotonous without giving a corresponding practical advantage; it would have been more satisfactory to have designed one central niche and two different side features. The library had been somewhat sacrificed to the loggia, though assuredly the author was right in making the loggia the more important. In this competition Mr. V. O. Rees had been given the second place. He had presented a much more ambitious scheme; the library was even more dwarfed than by Mr. Meldrum. But the architecture was altogether too heavy for its purpose, and the piers would seriously interfere with the views of the garden. The loggia was so arranged that views could be obtained from both sides; this was some advantage, but the draughts would interfere with the comfort of those using the loggia. The design submitted under the device of a mask was an extremely clever plan, which obtained all the advantages from each side without losing the comfort of enclosing walls; the library was better lit than in the other designs. Most of the other competitors had failed to grasp the essential character of a loggia, and had designed instead a vestibule or covered entrance.

Of the measured drawings Mr. Davis said that Mr. Arthur F. E. Poley had submitted an extremely interesting and valuable record of the finest work of our greatest architect. His measured drawings of the west front of St. Paul's deserved the greatest praise; but unfortunately the draughtsmanship was rather hard and unconvincing. It rather failed to convey the charm and freedom which were the greatest characteristics of Wren's work. This was mainly due to the washes applied, which detracted from the general effect.

With the drawings of which Mr. H. St. John Harrison had won the Pugin studentship, Mr. Davis said the buildings treated had been dealt with in a sympathetic and interesting manner. The necessary architectural qualities were carefully delineated, and the actual drawing was at the same time an attractive picture and a good architectural subject. The Owen Jones prize had been won by Mr. G. F. Quarumby by studies some of which were not strictly architectural; and Grissell Gold Medal, which had been won by Mr. F. H. Heaven, was awarded for a subject that was rather engineering than architectural, and which he (Mr. Davis) did not feel competent to criticise.

The President thanked Mr. Davis for his remarks, and then proceeded to distribute the prizes.

The Secretary then announced that the next meeting would be held on Monday,

February 16, when Mr. Paul Waterhouse, chairman of the Board of Architecture and Education, would read a paper on the education of the architect.

THE BUILDING GUILD.

The proposals of the Building Guild Committee to build houses for the Manchester Corporation were put before a large meeting of Manchester building trade operatives last Sunday. A resolution was unanimously passed pledging support of the Guild scheme. The Committee will now be in a position to make a definite offer to the Corporation.

Mr. L. Watson, chairman of the Building Guild Committee, said that with that meeting the scheme of the Building Guild Committee was brought within the sphere of practicability. Many interviews had taken place with men interested, like Sir Thomas Robinson, members of the Housing Committee of the Manchester Corporation, officials of the Ministry of Health, and the representatives of a bank. While the Committee had some practical proposals, they wished to obtain through that meeting the support of the whole of the operatives in the various building trade organisations, and then they would be able to begin. "We believe it is possible to make a scheme like this go, and we know from the numerous letters of inquiry we have received from all over the country the widespread interest that is being taken in it. The place to start is Manchester, and then later committees can be formed in other towns radiating from this centre, who will be able to profit by our experience."

MATERIALS AND CREDIT.

Mr. S. G. Hobson, the secretary of the Guild Committee, said that the building trade was in a position to realise what had long been a dream of the organised workers—that the trade union should be blackleg proof, or, in other words, that the organised workers should have a monopoly of their own work. The practical problem was how to apply that labour monopoly so that it coincided with their own interests and with the interests of the public. Manchester wanted urgently and immediately not less than 20,000 houses, and in the near future nearer 50,000. Whatever steps might be taken by the organised building operatives, if those steps led to the actual building of houses—instead of mere talk about building—they were serving the public interests in such a way that the public would be grateful to them for it. On the question of credit, Mr. Hobson asked how much better off was the ordinary jerry-builder than the Guild, now that to build 2,000 houses meant an outlay of nearly £2,000,000. At the present houses were being built for the Corporation, and if the Guild was to build the credit must be that of the Corporation, which meant, of course, the credit of the workers of Manchester.

Dealing with the question of the provision of materials, Mr. Hobson said it was quite a feasible plan for the Guild Committee to buy the materials themselves, providing the payments by the Corporation were received at reasonable intervals. The point then came up whether merchants and manufacturers might not prefer to sell their goods to the private builder and contractor, and leave the Guild in the cold. It was thought, however, that the simplest way would be to take the suggestion that the Guild Committee should mobilise the labour and build houses under their own direction and organisation, and that the Corporation should itself purchase the materials needed.

The Guild idea was opposed to the old theory that labour should be sold as a commodity. Labour was a human thing into which went a man's personality. The wages system must be transformed from one in which labour was the last charge on industry to one in which it would be the first. The Guild Committee proposed to get out the net cost of building and then to add 10 per cent. for overhead charges, of which 3 or 4 per cent. must go for buying plant—mortar mills, scaffolding, barrows, and so on. To make labour the first charge on industry meant that every man who joined

the Guild was entitled to full pay whether he had work or not, whether he was ill or well. With the balance of 10 per cent. they proposed to give practical effect to this maintenance in unemployment and sickness. The Guild would govern itself, for they believed the building trade had reached a stage of development in which self-government had become a living practical affair. The Guild Committee which had been formed was entirely representative of the trade unions in the building industry. In carrying out the scheme they would be building for their fellow-workers. Was it likely they would scamp the work? Men were not allowed to do good work at present, but if they got self-government in the industry good work would be done. The Guild scheme meant the introduction into the building industry of a spirit of fellowship and of unified effort, which it could never have under private management and direction.

AN INVITATION TO OTHER TOWNS.

Many questions were asked, some of them searching and rather critical, but none hostile. One asked was how it was proposed to get men to leave their present employers and work for the Guild. Who, he added, would "carry the whip." (Laughter.) The Chairman replied that there would be no whip. Volunteers would probably be asked for, and he believed more would respond than were needed. (Hear, hear.) Another question dealt with the relation between the Guild scheme and the Foster report of the Building Trades Parliament. The Chairman said the memorandum which had been prepared on the Manchester scheme provided that within two years, if it is desired, everything should be handed over to a National Guild. At the moment they had nothing to do with that; Mr. Malcolm Sparkes, however, had admitted that the Manchester proposal went beyond anything he had thought of in his plan. The Chairman stated, in reply to another question, that the plumbers had been approached with a view to their joining the movement.

Mr. R. Coppock (Operative Bricklayers' Society) moved the following resolution:—

That this mass meeting of building trade operatives of Manchester and district pledges itself to support the Building Guild Committee, and undertakes by every means within its power to render the work of the committee a lasting success. It earnestly invites the building operatives of other centres to organise similar committees to work in close co-operation, believing that it is only by unified and national effort on the part of the building trade operatives that houses can be erected for their fellowworkers.

Mr. Coppock, who spoke of the way in which the scheme was being taken up in Warrington, Colwyn Bay, and Wrexham, said it was to the interests of the Guild to keep building costs down so that rents might be lower.

The resolution was seconded and supported from the audience, and carried unanimously.

The Institute of Architects of Ireland has been invited to nominate a member to act in an advisory capacity on the Irish War Memorials Committee, which was inaugurated by Lord French.

The Wing (Bucks) Housing Committee, who some months ago refused tenders under which houses would cost £900 each to build, has now accepted a tender under which the cost is £774 for the same type of house.

The Governors of the Royal Irish Academy of Music have had under consideration an extension of the Academy premises, in the building of a new concert hall, plans of which were submitted and approved at their recent meeting, and a sub-committee authorised to take the necessary steps for the purpose.

The question about the War Calvaries is exciting a good deal of interest in Church quarters. While most diocesan chancellors allow them, some are hostile, holding them to be illegal, and Chancellor Charles, as our readers are aware, at the Hereford Consistory Court refused to sanction the erection of a war shrine of this character at Tenbury. Notice of appeal to the Court of Arches was given, but whether it will be pressed we do not know.

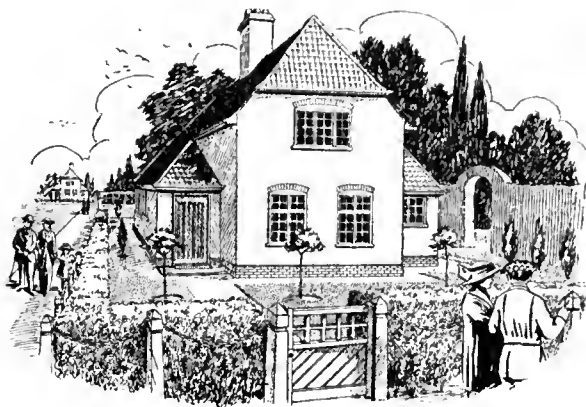
THE IDEAL HOME EXHIBITION.

The Ideal Home Exhibition at Olympia was opened on Wednesday. There was much to be done and little chance of inspecting the exhibits on Tuesday, the day of the Press view, so that any complete notice was impossible.

Among the more interesting and in a stage of completion which facilitated inspection was the well-designed and fitted model cottage shown by Messrs. Vickers, Ltd., of Vickers House, Broadway, Westminster, S.W.1, at Stand 59, which most visitors will prefer to some of the more ambitious erections. It has been erected in ten days under the supervision of the Concrete Machinery Department at Vickers House, and is a most satisfactory testimony to the despatch and completeness

wiring, and shows the suitability of the wire and accessories for efficiently, yet unobtrusively, wiring on the surface different classes of houses. The various neat and effective finishes which are available make this wire particularly useful for alterations or extensions without spoiling the effect of delicate and artistic decorations, as it will readily blend with any colour scheme.

Venesta, Ltd., the well-known ply-wood specialists, of 1, Great Tower Street, E.C.3, show a room at Stand 106 with the walls covered with their ply-boards in lieu of lath and plaster, which completely does away with the dampness always found in new houses, and moreover furnishes an admirable medium for permanent decoration of walls and ceilings. Some excellent oak panellings are also



THE VICKERS COTTAGE AT THE IDEAL HOME EXHIBITION.

that may be relied on at the hands of that section. The building and its fittings, the whole of which are manufactured by the Vickers Company and its branches, are designed to show the possibilities of the conveniences available for modern tenements, small and large, and will be of considerable interest to builders. The furniture, the electric lighting, the rubber tiling, the barometer and thermometer, the patent internal partitions, the paintwork, and in fact all the modern conveniences exhibited, are referred to in detail in a booklet which is obtainable at the Vickers stand. No visitor should fail to ask for a copy, every page of which is informative.

Next to the above, at Stand 58, Bell's Asbestos Co., Ltd., of Southwark Street, S.E., have another successful cottage which is in many ways unique. It is built throughout with Bell's Hurcan building slabs, which differ in every way for the better widely from the ordinary concrete block, being impervious to moisture, and exhibit a finely finished surface of asbestos cement (Poilite) sheet to which the concrete backing is applied in manufacture. The cottage is roofed with Poilite tiles. Hurcan slabs as here used have been approved by the Ministry of Health in connection with State-aided housing schemes. In addition to this interesting structure, Poilite asbestos cement flat building sheets, corrugated sheets and tiles are on view.

At Stand 85 the Ironite Co., Ltd., of 11, Old Queen Street, S.W.1, show specimens and modes of application of their fast becoming famous "Ironite" cement, which renders floors wearproof, dustproof, waterproof and greaseproof for machine shops, engineering works, coal bunkers, dock quays, warehouses, power stations, garages, stables, mills, refrigerating plant, packing houses, stores, dairies, etc. As will also be noted, "Ironite" and Portland cement slurry or grouting, waterproof breeze blocks, concrete brickwork, hollow blocks, etc., avoid the heavy cost of rendering. The company's patent hollow building blocks are another speciality the merits of which are indisputable and should not be overlooked.

Visitors to Stand 90, occupied by Callender's Cable and Construction Co., Ltd., of Hamilton House, Victoria Embankment, E.C.4, will admire the electric lighting of the two portions of rooms which is carried out completely on the "Kaleeco" system of

shown suitable for dining-rooms, halls, libraries, etc., and some good parquet flooring.

THE R.I.B.A. CONFERENCE.

The housing conference, organised by the Royal Institute of British Architects, was begun at the exhibition on Wednesday, and was to be continued yesterday and to-day. Sir Reginald Blomfield, R.A., Past-President of the Institute, presided in the absence of Sir Aston Webb, and among those present were Dr. Addison, Minister of Health, Sir Kingsley Wood, M.P., Major H. Barnes, Mr. Bernard Holland, Mr. Oscar Warburg, and Mr. S. B. Russell.

Dr. Addison, Minister of Health, said that big blocks of schemes were reaching their final stages now every week, so that instead of proposals trickling in by tens or hundreds, they had during the last week eleven thousand new house plans submitted to them, of which more than seven thousand were approved. In the same period there were 3,300 contracts approved for work to be begun, and the numbers were rapidly increasing every week. They had passed the hundred thousand mark in house plans submitted, and those plans were fast approaching the tender stage. The Ministry of Health were not able to supply such things as labour and money, but, short of these two disabilities, he saw no reason why two hundred thousand houses should not be completed or in course of erection this year.

ARCHITECTS AND ECONOMY.

He acknowledged his indebtedness to the Institute for the ready help they had given throughout the country. There were, however, architects and architects, and not all architects showed a regard for economy and speed. He mentioned a case in which a re-adjustment of the lay-out had resulted in a saving of £2,000 on roads, and another case in which a saving was effected of £10,000 on a scheme for 300 houses. The exhibition would, he hoped, make some impression on the innate conservatism of the British race. In general a room with a ceiling 8 ft. high was as good as one 8 ft. 6 ins. high, but deputations had angrily remonstrated against permission to adopt the lower figure. The Ministry had been accused of being reactionary and encouraging slums because they had tried to save £20 a house in this way. Any

departure from what people were accustomed to meet an obstacle on the conservatism of the British race. If cheaper and often better methods of house construction were to be adopted the traditional outlook and habits of the people had to be altered. He hoped all concerned would examine the new and ingenious exhibits shown there, and that by that and other means more variety would be introduced into house construction.

In the course of subsequent discussion Major Barnes said he could not think that there was justification for some of the advance in the prices of materials, when a kitchen range, which cost £3 before the war, now cost £18, and baths, which could be had for £3, were now £11 or £12. He hoped the Government would make it its first business to investigate the prices prevailing for builders' materials. (Cheers.)

NOISES IN DOMESTIC WATER-PIPES.

The troublesome noises often heard where water flows through a tap can, according to a translation by the *Technical Review* from the Swedish *Teknisk Tidskrift*, be easily avoided if suitable precautions are adopted.

Experiments have been carried out in Sweden in this connection on a 158-ft. long galvanised iron pipe nearly $\frac{5}{8}$ in. bore. It was connected to a 6 in. supply pipe by means of a $1\frac{1}{2}$ in. valve and reducing pieces, and included six right-angle bends having a radius of 3 ft. $\frac{3}{4}$ in. The extremity of the pipe was carried through the sound boarding to an upper story, where observations were made.

In the first experiment water flowed through the pipe at the rate of $3\frac{1}{4}$ gallons per minute, viz., at a velocity of 4.4 ft. per second, but no sound could be detected unless in contact with the pipe. In the second experiment the tap was fully open, and water flowed at the rate of 4.8 gallons per minute, or at a velocity of 6.56 ft. per second. The sound was somewhat stronger than in the first case, but still hardly audible. In the third experiment the pipe was shortened to 18 ft. and the number of bends reduced to two in order to obtain a greater velocity. The discharge was further increased to $16\frac{1}{4}$ gallons per minute, corresponding to a velocity of 22 ft. per second. Even with this excessive speed the sound was scarcely audible at a greater distance than 8 in. from the pipe.

From these experiments it appears to be clearly established that noises in service pipes are not caused by high velocity, and that the cause must be sought in the taps and fittings employed, the pipe only acting as a sound-board. A number of taps from various manufacturers were tested, and it was found that they all caused sounds in the pipe, although the intensity of the sound varied considerably.

In order to study the laws governing such sounds differently shaped mouthpieces were fitted to one of the taps. A metal cover with a $\frac{1}{8}$ in. hole drilled through, when fitted to a tap on the pipe used in the first two experiments, produced a sharp, hissing noise. A conical mouthpiece with the same amount of opening and tapered 1 in 10 in the direction of the flow produced no noise, but when the cone was reversed considerable noise resulted. Noise was also produced by conical seatings, sharp contractions under the valve seating, too small lift of the valve disc, etc. By selecting taps where these features were absent all noise could be eliminated, and the most effective means to obtain freedom from all noise consisted in the avoidance of sharp edges and sudden changes of velocity through the taps.

The death is announced of Lady Burne-Jones, in London, in her eightieth year, the last member of a remarkable sisterhood, all manifesting special gifts of person, mind, and imagination. One was the wife of Sir Edward Poynter, President of the Royal Academy; another of John Lockwood Kipling and the mother of Mr. Rudyard Kipling; a third, who still survives married the late Alfred Baldwin, for many years M.P. for Bowdley, and is the mother of Mr. Stanley Baldwin, Joint Financial Secretary to the Treasury. After her husband's death in 1893, Lady Burne-Jones lived almost wholly in her little country house at Rotheringdean.

Our Illustrations.

RECEPTION ROOM OF A TOWN HOUSE IN NEW YORK.

The architect of this work, Mr. George I. Bankart, has lent us his autograph drawing, which was shown at the last Royal Academy exhibition. The rich plaster ceiling and frieze above the wainscot panelling form the chief distinction of the apartment illustrated and the subject is self-explanatory.

THE BUSH INTERNATIONAL SALES BUILDING ISLAND SITE IN THE STRAND, LONDON.

The week before last we published two views of the northern facade of these proposed buildings to be erected in Aldwych, with a frontage in the Strand. Our photographs included the central part to a larger scale and showing particularly the portion which will fill the vista from Kingsway. In order to illustrate the general lay-out and also the immediate relationship of this new group of business premises to St. Mary-le-Strand, we reproduce to-day a birdseye photograph of the architect's model, showing its dominating and lofty centre-piece, over 200 ft. high, surmounting the flat roof of the middle block. This tower does not emphasise any essential arrangement of the building inside and does not grow out of any special contrivance of its plan. The graceful steeple of Gibbs' beautiful and delicate church will be overwhelmed by the scale of its near neighbour, but possibly the sturdy dignity of Chambers' elevation of Somerset House, somewhat further west on the other side of the way, may hold its own and be less interfered with. Seen from Holborn in the environs of the Cinema Opera House, and other Americanised big piles of masonry in Kingsway, the predominating tower will appear more harmonious, and its relative proportions can hardly detract from the neighbouring new buildings, and the Waldorf Hotel is not so near, set as it is between two commonplace theatres. The architects of Bush House, the parapet walls of which are 80 ft. tall, are Messrs. Helmle and Harvey W. Corbett, of New York. The second plate given herewith shows the main portal to the premises on the Aldwych frontage end of the central block.

299, OXFORD STREET, W.

This building is on the south side of Oxford Street, between Oxford Circus and New Bond Street, and the site was formerly occupied as the headquarters of the British Medical Council, the new buildings being for the occupation of Messrs. E. Pollard and Co., Limited, and Messrs. Reville, Limited. At the request of the Ministry of Munitions, it was re-designed as a ferro-concrete building, and the contract is now practically completed. A distinctive feature is the shop front, which occupies the basement, ground and first floors, and which has been carried out in bronze by Messrs. E. Pollard and Co., Limited. The elevation is in Portland stone, from the quarries of Mr. F. J. Barnes, Limited; the ferro-concrete construction was carried out partly by Messrs. Somerville and Co., Limited, and partly by Messrs. J. Munday and Sons. The front windows are steel casements by the Luxfer Company; the marble and mosaic work and the tiling were executed by Messrs. Boulton and Co.; the central heating was carried out by the Thames Bank Iron Works Company, and the electric passenger lift and the goods lift were supplied by Messrs. Waygood, Otis, Limited. The external escape stairs was constructed by Messrs. Haywards,

Limited, and the stair-balustrading by Messrs. W. I. Allen and Co. The general contractors were Messrs. J. Munday and Sons, their foreman of works being Mr. C. J. Feesey; the architect was Mr. Delissa Joseph, F.R.I.B.A.

"THE GREENLAND FISHERY," KING'S LYNN, NORFOLK.

The Greenland Fishery is a relic of the days when whaling was a local industry, and this house is one of the most picturesque buildings in Lynn. Originally built as a private residence in the early 16th century, the place afterwards was used as an inn, and now, owing to the generosity of a local resident, has become partly a museum filled with local antiquities.

The sketch reproduced to-day has been lent us by Mr. R. Scott Cockrill.

STATUES, MEMORIALS, ETC.

HEIGHAM.—General Lord Horne of Stirke, G.C.B., visited Norwich on Sunday week to unveil a stained-glass east window at the church of St. Barnabas, Heigham, in memory of those connected with the church and parish who laid down their lives in the great war. The window is designed and executed by Messrs. C. E. Kempe and Co., of London, and is of seven lights. In the upper part of the central light is a representation of Our Lord in Majesty, with adoring angels on either side; below is, on one side, the agony in the garden, and on the other the way of the cross. Between, in the centre, are the angels at the sepulchre announcing the resurrection to the holy women. In the upper four lights are figures of St. George, patron saint of England, and of soldiers and of the St. George's Ward of the Guild of St. Barnabas; St. Martin of Tours, on whose feast day, November 11, the Armistice was declared; St. Nicholas of Myra, patron of mariners, representing the Navy; and St. Michael, Archangel, the patron of the Air Forces; and of St. Michael's Ward of St. Barnabas' Guild.

LOUGHBOROUGH.—The town of Loughborough, in Leicestershire, has decided, by a plebiscite vote, to erect as a war memorial a campanile to contain a carillon (with clavier) of 49 bells. The tower, of Gothic design, will be over 120 ft. high, and the largest bell will weigh three tons, the cost of tower and bells being between £10,000 and £12,000. Loughborough will be the first town in England to possess a carillon of ample compass and proportions. At the invitation of the Mayor and Corporation, Mr. William Wooding Starmer, a well-known authority on bells and bell music, lectured on the subject at a public meeting in the town hall at Loughborough last week. He set forth the claims of bells as musical instruments, explained the technicalities of carillon construction, and gave musical illustrations. He claimed that the carillon, with clavier, was the most democratic instrument in existence for educating the people in and cultivating their love for folk-songs and for teaching them the great melodies of their fatherland. The music best suited to the carillon—excepting that specially written for it—included the folk-tunes which had successfully withstood the test of time.

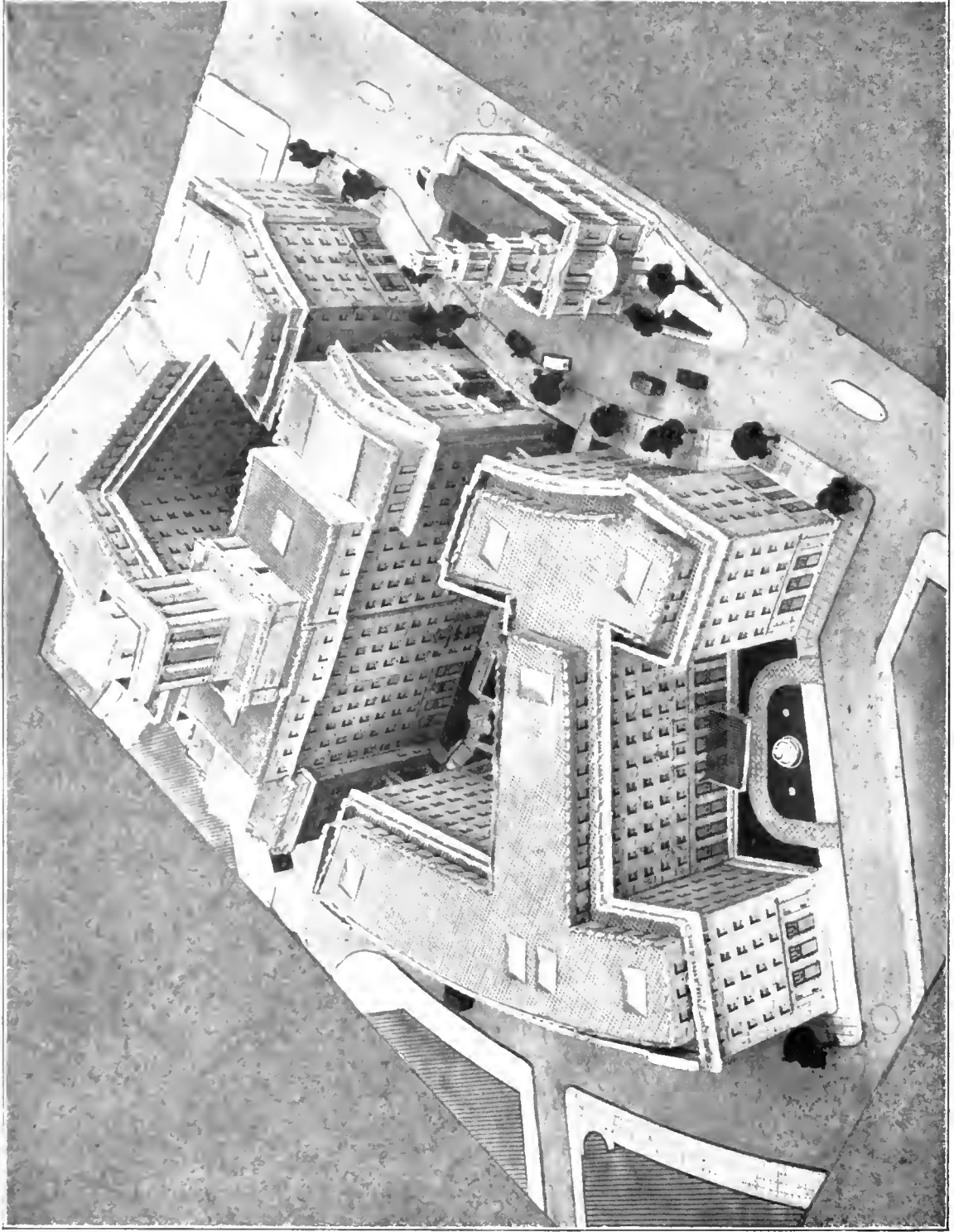
SPALDING.—It has been decided to place a war memorial in Spalding Parish Church to the memory of all local soldiers without regard to denomination or creed. The memorial will perpetuate the present war shrine in more worthy and permanent material, with the addition of a monument in accordance with a design prepared by Mr. Geoffrey Lucas, F.R.I.B.A., of the firm of Messrs. Lanchester, Rickards, and Lucas, of Bedford Square, London. The cost is estimated at £1,000, and an appeal is being made for subscriptions.

Mr. Leonard Clarke has reconstructed the firm of Leonard and Clarke by associating with himself as partners Mr. Charles E. Mackenzie and Mr. Henry A. Morter as from January 1 at 102, Bishopsgate, E.C.2.

The Society for the Protection of Ancient Buildings has at this moment an offer of an old cottage for the absurd sum of £20. True, it is a derelict, but the society is confident that, with an expenditure of about £300, it can be made into a new home, and the society is now appealing for funds to carry out this work as an object lesson.

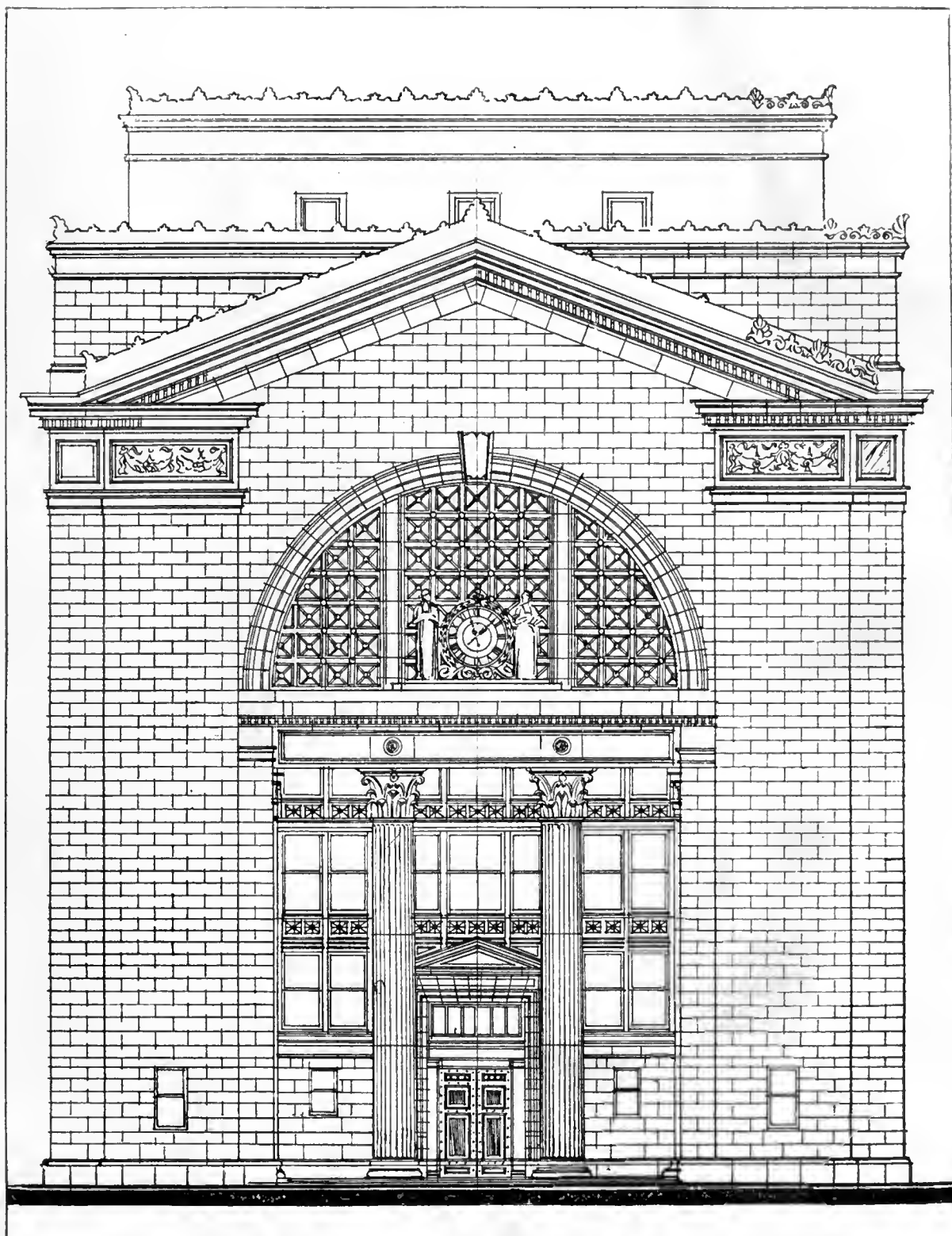


THE BUILDING NEWS, FEBRUARY 6, 1920.

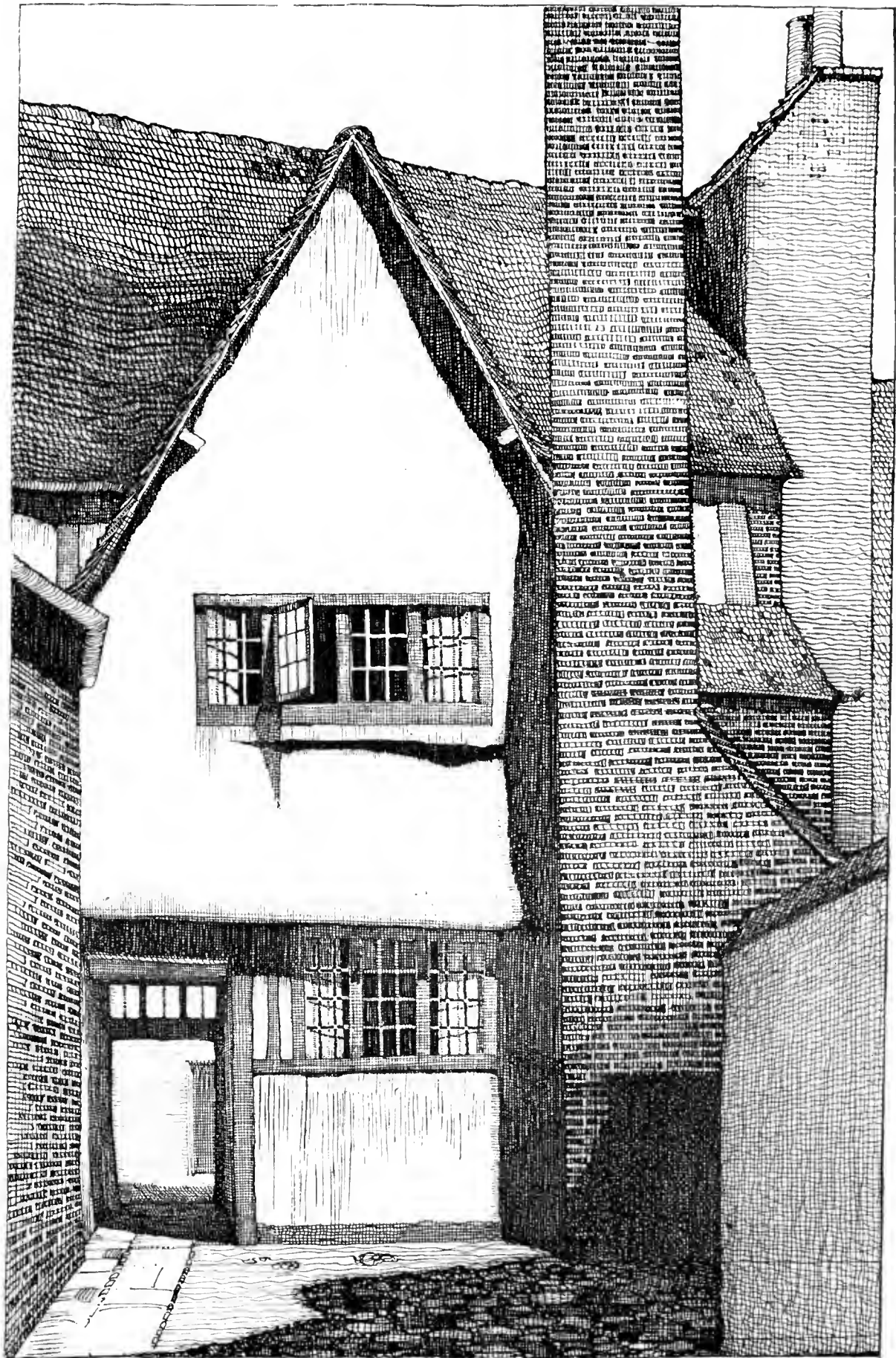


THE BUSH INTERNATIONAL SALES BUILDING, STRAND ISLAND SITE,
Messrs. HELMLE and HARVEY CORBETT, Architects.

THE BUILDING NEWS, FEBRUARY 6, 1920.



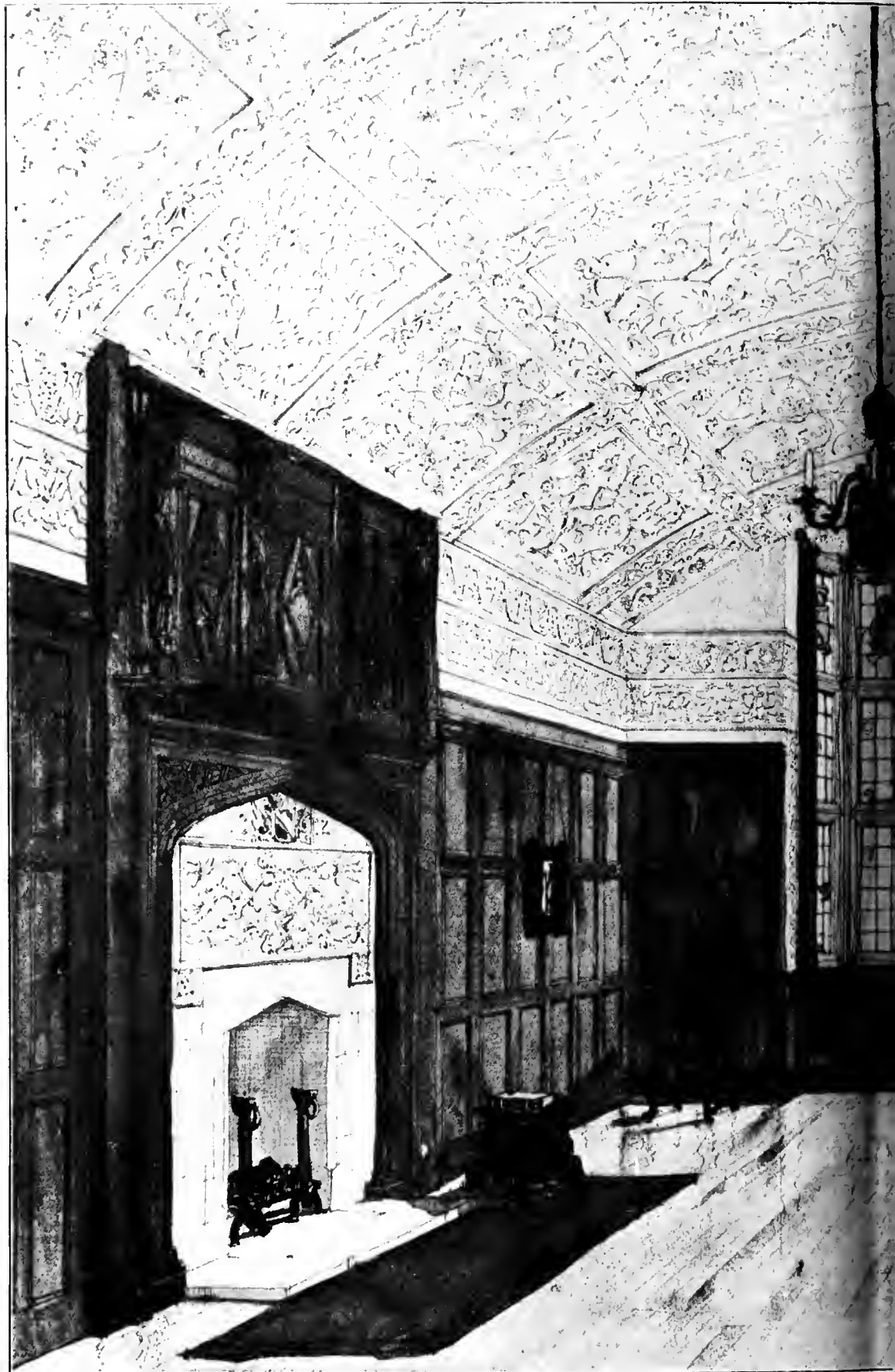
THE BUSH INTERNATIONAL SALES BUILDING : NORTH PORTAL.
Messrs. HELMLE and HARVEY CORBETT, Architects.



BACK OF "GREENLAND FISHERY," KING'S LYNN, NORFOLK.
Sketch by Mr. R. SCOTT COCKRILL.



101-4



RECEPTION ROOM OF A TOWN HOUSE
MR. GEORGE P.

RUARY 6, 1920.



HOUSE IN NEW YORK.
Architect.

PROFESSIONAL AND TRADE SOCIETIES.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.

—The seventh general meeting of the session was held at the Medical Institute, Edmund Street, Birmingham, on Friday, January 30. The Vice-President (Mr. R. Savage, F.R.I.B.A.) took the chair, and 53 members were present. Mr. J. E. Southall read a paper on "Mural Decoration." The lecturer said that at the present time there seems to be more difficulty about building walls than about decorating them. Our remote ancestors executed some remarkable mural decorations in the caves they inhabited, long before they built any walls, and these decorations, perhaps 50,000 years old, were so good that there really seems very little more to be learnt. Those who have studied prehistoric Egypt cannot fail to recognise how highly skilled in mural decoration were the ancient peoples occupying that country. Examples of their work, dating back to the period of the development of the Mastaba and Pyramid, may be seen to-day in the British Museum. It does not seem that mural decoration has ceased to interest mankind, as witness the posters in our streets, and our wall papers, etc., indoors. What is lacking is a sense of the possibilities of such decoration, and of dignity, beauty and permanence. We waste a great deal of money on bad, cheap or temporary decoration both indoors and out. On the day devoted to the celebration of Peace a few months ago, there broke out on the façade of the Council House in Birmingham a dreadful eruption very painful to behold, and indicative of some dire disease within. It could not be called mural decoration, but one imagines it was so intended, neither can one suppose that the portraits displayed were deliberately meant to be libels. The display had one merit—it was soon over; but what guarantee have we that it may not break out again? Thousands of years ago beautiful and instructive decorations were put upon public buildings at quite moderate cost, which remain to be a delight to this day. Why should we, in this generation, be content with rubbish? The lecturer pointed out that he was not dealing with domestic decoration, of which the most delightful perhaps is tapestry, but rather of the enrichment of public buildings, which can be achieved either by low relief, coloured or not, by mosaic, by fresco, or ornamental painting in other methods. Mosaic, however, deserves some consideration, because if we are weak or foolish enough to tolerate the smoke-laden atmosphere of our cities in the future—that is the form of decoration best able to endure it. The mosaics of the third century A.D. in Rome are so modern in appearance that they may be called not merely impressionist but even cubist, for they are literally constructed in cubes; the mosaics of Sta Maria Novella Rome being splendid examples. The great method of Italian wall-painting is true fresco which, being chemically bound in the plaster as it dries, will stand for centuries both indoors and out. These fascinating works have been a good investment for Italy, and are to-day a great source of income. A great deal of interest was added to the lecture by a number of lantern slides illustrating the best methods of mural painting, the lecturer pointing out that a great principle of wall decoration is the preservation of a sense of the wall surface—a feeling of the flat plane of the wall itself. For that reason realistic light and shade and aerial perspective are undesirable in such work. The best frescoes are those which consist rather of beautiful drawing and colour with faint modelling. In later work painters sought to deceive the eye and to give the impression of an opening in wall or ceiling right to the open air, thus missing the decorative sense altogether. In concluding, the lecturer appealed to architects not to overload their buildings with pilasters and moldings, etc., so that the wall-painter might have some scope. He asked that architects should make a little space at their table for their brothers the sculptors and painters not only at meal times, but also when doing their lessons. Mr. A.

Harrison, F.R.I.B.A., in proposing a vote of thanks, said he thought the lecture had been most informative and enjoyable to all, and said he hoped there would be more co-operation in the future between architects, sculptors and painters. Mr. J. A. Swan, F.R.I.B.A., seconded the vote, and was supported by Mr. R. Catterson Smith, Mr. W. Haywood, F.R.I.B.A., and Mr. W. J. Wainwright, A.R.A.

INSTITUTION OF MUNICIPAL ENGINEERS.—At the annual meeting last Saturday the President, Mr. Reginald Brown, M.B.E., F.S.I., delivered his annual address. Referring to housing, he said:—"We want new methods of construction by which houses can be erected with less labour or by which labour can be employed more economically, because, believe me, labour is going to be the predominating factor both in the production of building materials and the erection of houses, whether new materials or forms of construction are used. Numerous new forms of construction have been suggested, but there has, it appears, been a paucity of new ideas put forward by municipal engineers—the very people whom it might have been anticipated would have led. Have we got into such a rut as to be barren of ideas for improvements? I should not like to think so. Again, not only new methods of construction are needed, but production of new materials—alternatives or substitutes for the materials commonly used. Dissect a cottage, and see what it consists of—walls of brick or stone, roof coverings of slates or tiles, floors of timber. Now, what are the principal alternatives suggested? Walls of concrete and wood, roof coverings of concrete tiles or asbestos slates, and floors of concrete. Not very extensive, are they? And what about the individual constituents of a building? Where is the alternative and economical material in place of brick, the floor joist, the rain-water gutter, and down-pipe, the enamelled bath, and many other items? There would appear to be very little difference in cost in the methods of construction put forward, everything else being equal. What is wanted, perhaps, more than anything is increased and more economical production in materials and increased and more economical means of placing those materials in a building. Increased production and cheaper construction can come about by a closer attention to detail and organisation. The elimination of waste in cutting out all unnecessary operations requires close attention. One could give many instances of organisation which would eliminate unnecessary labour and expense. Many of these individually are small, certainly, but in the aggregate make a big difference to the ultimate cost."

NATIONAL FEDERATION OF BUILDING TRADES EMPLOYERS.—At the annual meeting held on January 23 the report stated that, having regard to the pressure being put on the building industry to obtain outside labour, and that it was not the time to shorten hours, the Council had requested the administrative committee to confer with the representatives of the operatives' federation so that the decision of the National Board should not come into effect on May 1 next, but at some later date. It was announced that the interim report of the management and costs committee of the Industrial Council of the Building Trade met with the Council's disapproval, and steps were to be taken to express its disagreement. A resolution was carried approving of the Draft National Code as printed, subject to a few minor amendments. The following were elected president and officers for the ensuing year:—President, Mr. S. Easton (Newcastle-on-Tyne); senior vice-president, Mr. A. J. Forsdike (Sheffield); junior vice-president, Mr. John Good (Dublin); treasurer, Mr. W. H. Nicholls (Gloucester); senior auditor, Mr. J. Croad (Gosport); junior auditor, Mr. H. Matthews (Manchester). Mr. Easton, the new president, moved that his predecessor, Mr. Dove, should be added to the list of hon. vice-presidents, and it was carried. It was agreed to hold the summer meeting of the Federation at Newcastle-on-Tyne on July 27 and 28 next.

ROYAL ARCHEOLOGICAL INSTITUTE.—Mr. F. E. Howard delivered a lecture on "Some

Mid-Suffolk Churches and Their Woodwork" on Wednesday afternoon before the Royal Archeological Institute in the rooms of the Society of Antiquaries, Burlington House. There was no more satisfactory building in the country, he said, than a Suffolk church, with its fine exterior of tracery and flint work and its interior of refined masonry and woodwork. Out of thirty-odd churches that he had visited in the tour on which his paper was written only one was devoid of interest. They were practically all of the fourteenth and fifteenth centuries, and there was a little of an earlier date. Church after church was rebuilt in those centuries with a wide nave and a narrower chancel, and not one in fifty had a clerestory. We owed to the Fifteenth Century carpenters their wonderful timber roofs. The Fourteenth Century architects did well, but the Fifteenth Century architects did better. Their porches were mostly of flint and stone, rarely of stone alone. The wooden roofs of Suffolk were the finest of all, and there was a continual tendency towards more and more richness on the roof. Some slides were shown of the roofs and also of the few early carved pulpits which remain, also of screens and chantry chapels. Mr. Howard pointed out that Mid-Suffolk was extraordinarily rich in carved benches, many of the churches being pewed throughout with fine examples. As regards font covers, no county was so rich as Suffolk, and another delightful feature was the old wooden doors with tracery in their panels. Churchyard crosses were extremely rare in Suffolk, and Mr. Howard gave it as his opinion that the few examples found, from their exact similarity to crosses in Somerset, were made in Bristol and brought round to Suffolk by sea.

THE CHARM OF THE GARDEN.—A lecture was delivered by Mr. James Salmon, F.R.I.B.A., to the Edinburgh Architectural Association at the College of Art on January 29 on the subject of "Gardens," illustrated by lantern views showing some of the great gardens of Italy, Spain, Holland, France, England and Scotland. Mr. T. P. Marwick presided. The lecturer said that, given a garden, a man had already built half his house. A garden was half-a-dozen rooms in one, smoke-room, nursery, playroom, gymnasium, washing-house, reading-room, and much more. To increase the use of Scottish gardens he suggested log fires in the open. Lay down a stone hearth in a part sheltered from cold winds and surrounded by natural conches on which, wrapped in plaids, one could recline. Thus one could hold company with many a sunset, live through the gloaming, watch the stars come out, and see the varying moon pass on her way. There were faint signs of a revival of interest in garden designing in Scotland. We had the most beautiful country in the world and the finest gardeners, and he believed we had the greatest architects. All that was required was opportunity.

ULSTER SOCIETY OF ARCHITECTS.—A general meeting of the Society was held on Thursday, January 22, at 3.30 p.m. There was a large attendance of members from the different parts of the province. Amongst those present were Messrs. N. Fitzsimons (President), Capt. R. E. Buchanan, H. Seaver, R. I. Calwell, J. J. McDonnell, R. M. Young, F. H. Tulloch, E. R. Kennedy, H. Lamont, R. Gibson, W. C. Maxwell, J. Seeds, and T. W. Henry (Hon. Secretary). The President, welcoming the members to the first meeting of the Society since the war, referred to the loyalty of the members of the Society during the long period of war conditions, during which almost all work was at a standstill, and pointed out that with the acquisition of a number of new members the Society was now numerically stronger than at any other period of its history. A ballot was then taken for candidates passed by the Council for election, and five new members were elected and three new associates. During a discussion with regard to the revision of the bye-laws a member drew attention to the fact that the qualification for membership of the Ulster Society was higher than that for membership of the Royal Institute of the Architects of Ireland, but it was decided that, in view of the high stand-

ing of the Society and of the fact that almost every architect of repute in the province of Ulster was on the roll of membership, it would not be to the interests of the profession or of the public to reduce the standard of qualification. The holding of the annual meeting was fixed for early in February. The report of the sub-committee of the Council deputed to revise the conditions of contract in conjunction with a sub-committee of the Belfast Builders' Association was adopted unanimously.

OBITUARY.

The death of Mr. Andrew Carrick Gow, R.A., Keeper of the Royal Academy, occurred at Burlington House last Sunday evening, in his seventy-second year. Mr. Gow was elected R.A. in 1868, and since 1869 had exhibited continuously at the Royal Academy. He was elected an Associate in 1881, and ten years later became a full Academician. He has been Keeper of the Royal Academy since 1911. Among his notable pictures were "Cromwell at Dunbar," purchased by the Chantry Fund; the "Queen's Diamond Jubilee at St. Paul's," for the City Corporation; the Nelson Cartoon in the Royal Exchange; "Queen Mary's Farewell to Scotland," and "The Flight of James II. after the Battle of the Boyne."

LEGAL INTELLIGENCE.

CARPENTER'S BONUS.—KIT V. BOOT AND SONS, LTD.—This important test action was commenced in the Commercial Court of the King's Bench on the 21st ult. We reported the evidence on p. 85 of our issue of January 23, and had just time as we were going to press to mention in that of January 30 that Mr. Justice Roche had given judgment for the defendants, Messrs. Henry Boot and Sons, Limited, contractors, of Sheffield. The case was one of considerable importance, and we think the written considered judgment given by Mr. Justice Roche on the 28th ult. is worth giving in full.—Mr. Justice Roche read his judgment as follows:—The claim in this action is by a workman against his employers for remuneration in the form of a bonus on his earnings for the period from March to June, 1919. The amount at issue is small, but I was informed by both parties that the action affected a number of other claims. The plaintiff is a carpenter, and was at all material times employed by the defendants in house construction in a Government shipyard scheme. The defendants' contract with the Government Department was on a percentage basis on cost, including wages, and the rates of wages paid were subject to Government approval. The plaintiff was employed on munitions work, and he became entitled under awards of the Committee of Production to a bonus of 12½ per cent. on his earnings, and he was paid the bonus to March 5, 1919. Thereafter he was not paid the bonus, and he claims payment from that date until June, when any right to a bonus was admittedly at an end. Before September, 1918, a joint council of employers and workmen in the building trade and a National Board of Conciliation for the same trade had come into existence. Their functions were not quite identical, but they may be treated as one, and they are hereinafter referred to as the joint council. Adjustment of wages was an important part of the functions of the council. Its decisions on wages were subject to the approval or endorsement of the Ministry of Labour. In November, 1918, the plaintiff's time rate was 1s. 3d. an hour, and, as already stated, he was entitled to and received in addition the bonus of 12½ per cent. under the awards. Compliance with the awards was compulsory under the Munitions of War Act, 1915, Section 1 (4), down to November 21, 1918, when the Wages (Temporary Regulation) Act, 1918, came into force and repealed Section 1 of the Munitions of War Act. Thereafter, save in so far, if at all, as payment of the bonus was necessary to comply with the provisions of the Wages (Temporary Regulation) Act, 1918, as to prescribed rates of wages, compliance with the awards was a matter of contract between the workman and the employer. On December 17, 1918, the joint council agreed upon an increase of time rates to 1s. 4½d. in January and 1s. 6d. from February, and clearly contemplated that the bonus matter should stand where it did before—that is to say, men on munitions work were to receive it, and men on private work were not to receive

it. The plaintiff did receive it down to March 5. But before that date the Ministry of Labour had, by a letter of February 3, 1919, refused to sanction or endorse the proposal or arrangement of the joint council, and suggested a review of the whole situation. The ground of the Ministry's objection was that the distinction between remuneration for private and other work was now anomalous or undesirable and a uniform rate should be arrived at, and then fixed as a prescribed rate under the Wages (Temporary Regulation) Act, 1918. Pending such a review the Department of the Government supervising the defendants' contract in its turn refused to sanction payment of the bonus in addition to the increased time rates, and, not unnaturally, the defendants, though themselves disposed to continue the payment if they were reimbursed by the Government, felt that they could not safely pay it in the circumstances. They issued a notice that payment of the bonus would be suspended pending a ruling whether the bonus should merge into or be paid in addition to the wages advance—payment of the bonus to be retrospective if the point was decided in favour of the workmen. The plaintiff continued at his work to await the decision, and meanwhile he was paid 1s. 6d. an hour, but no bonus. One shilling and sixpence an hour without bonus is a higher rate of remuneration than 1s. 3d. an hour with the bonus. The joint council met again in June, and agreed upon a time rate of 1s. 7d. an hour without any bonus. At a subsequent meeting the time rate was increased to 1s. 8d. an hour. It is common ground that from June the bonus was merged in the increased and uniform time rate payable irrespective of the nature of the job on which a man was engaged. It is also common ground that neither the joint council in coming to their new agreement on June 1, nor the Ministry of Labour in approving of the council's action, expressly purported to deal with the past—that is to say, with the interim period between March and June, 1919.

On those facts the plaintiff contends that he is entitled to the bonus for the interim period. The argument for the plaintiff is that the awards were standing and effective during that period, and the suspensory notice had no power or effect to deprive him of his right to it. The argument for the defendants is that suspension of payment was agreed to when the plaintiff was employed and worked on the basis of the suspensory notice, and that the event never happened which was required to give the right to retrospective payment. In my opinion, the contention of the defendants must prevail. The ruling and decision contemplated by the notice were intended to be a ruling and decision either of the Ministry of Labour or of the Joint Council acting with the approval of the Ministry. No ruling or decision favourable to payment has been expressed, and, in my opinion, none is to be implied. The Court to which appeal is now made cannot give a ruling or decision in favour of the claim unless a right to the bonus is derived either from a contract between the parties or from legal obligation upon the defendants to pay the bonus. In the points of claim reliance was placed upon the combined effect of the awards and the agreement of the Joint Council arrived at on December 17, 1918, but the agreement of December 17 lacked the indispensable element of the concurrence therein of the Ministry of Labour, and without it had no binding force. It was not, and could not be, contended that employment under the March notice constituted a contract in any event to pay the bonus. It was, however, argued that there was a legal obligation on the defendants to continue payment of the bonus under the awards. I have already referred to the repeal of the section of the Munitions of War Act, 1915, which made compliance with the awards compulsory. Of course, the parties could agree to observe them, but, during the material period, I hold that the agreement between the parties was not to observe them unless and until a certain decision as to their observance was given, which has never been given. It remains to consider whether payment of the bonus was ensured to the plaintiff or was obligatory on the defendants by reason of the Wages (Temporary Regulation) Act, 1918, as being part of a prescribed rate of remuneration payable to the plaintiff during the currency of the Act. The scheme of the Act is to make the Minister of Labour the person to decide questions whether there is a prescribed rate and what it is; but, without discussing the question of the jurisdiction of this Court, and assuming it to exist, on the evidence furnished by the facts themselves and by the action of the Minister thereon, I am unable to arrive at any other conclusion than that there was no

prescribed rate then applicable to workmen of the plaintiff's class. The Minister's objection to the proposal submitted to him was in substance that it was desirable to substitute a prescribed rate for the varying rules then subsisting and due to the bonus system. The Wages (Temporary Regulation) Act clearly contemplates the non-existence, as well as the existence, of prescribed rates, and it may be permissible to say that experience in Munitions Tribunal appeals has shown that the absence of a prescribed rate in important trades is not very uncommon. Having regard to my conclusion that the bonus was not part of a prescribed rate, it is unnecessary to decide upon the further contention of the defendants, that by paying the advanced time rate they had paid wages to the plaintiff at a rate greater and not less than any prescribed rate existent when the Act came into force, and therefore had not failed in compliance with the Act. It is a formidable contention for the plaintiff to meet, but it is not necessary for me to decide whether it ought to prevail; and I therefore deal only with this point to indicate that it was taken and is open, if this matter should go to another Court. I give judgment for the defendants in this action. Then there will be no costs in this action. This was part of the clearing up of a very difficult matter.—Mr. Schiller said the Treasury did not desire costs, as it was in the public interest that the matter should be cleared up.

COSTS REFUSED FOR RECTOR'S OBJECTIONS TO GRANT OF FACULTY.—A Consistory Court was held on Saturday week, at Ipswich, to hear objections lodged by the Rev. H. C. R. Macpherson, rector of Copdock, to the granting of a faculty to erect a monument in Copdock Church, and a brass in Washbrook, in memory of the men from those parishes who fell in the war.—The Chancellor, on the application of Mr. A. M. Bernard, on behalf of parishioners of Copdock, pronounced that the petition on the file was reasonable, in proper form, and was that day unopposed in Court. The memorial appeared to him to be eminently suitable; it was designed by an architect of repute, and in his opinion would be a distinct ornament to the church. He decreed that a faculty be issued for its erection in accordance with the designs then approved in Court.—The petitioner had applied for costs to be awarded in respect of the opposition which was threatened that day.—The Chancellor said to his mind the opposition was not based on any reasonable ground, and the petitioner had been placed under the necessity of preparing the case for the granting of the faculty at considerable trouble, and a special sitting of the Court had been necessitated by the opposition of Mr. Macpherson (the rector). A letter from that gentleman had been received by the Registrar of the Court only that morning, entirely lacking in respect for the Court, and intimating that he did not intend to be present to support his opposition. It was within the Chancellor's power (and he regarded it as his duty) to defend and maintain the dignity and authority of the Court. He ordered that the costs of the application be borne and paid by Mr. Macpherson, to mark his (the Chancellor's) sense of his contumacious opposition to that petition, and the Registrar would issue the necessary order.

The Professional Classes War Relief Council moved on Monday last to their new offices at 251, Brompton Road, S.W.3 (third floor).

The British Institute of Industrial Art is getting on in its new home in Knightsbridge, preparations being in progress for the first exhibition, which will be held in April. Two classes of exhibitors will be invited to send their wares—manufacturers on multiple production methods, and artist-craftsmen proper.

At the annual meeting of the Church Crafts' League last week, the Rev. A. G. B. Atkinson expressed regret that Advisory Boards had only been set up in some seventeen of the dioceses. Where they had been established they had done valuable work in the prevention of the erection of unsuitable and inartistic memorials. He greatly feared that in dioceses where no such committee existed an appalling amount of havoc had been wrought.

The Walthamstow Profiteering Committee passed a resolution last week stating that they intended to adjourn until such time as the Profiteering Act was amended in a manner that would allow of a real attempt being made to punish all persons found guilty of profiteering offences. We are not surprised! At the coming general election thousands of voters will silently emphasise the almost universal conviction that the measure was drafted expressly to catch the little foxes and let the big ones through with impunity.

Our Office Table.

An interesting point under the Early Closing of Shops Act was argued at London Sessions last week, when Theophilus M. Davis, chemist, appealed against the fine of twenty guineas imposed at Bow Street for allowing his shop to remain open after eight o'clock. Sir Archibald Bodkin, for the appellant, argued that the flow of customers after eight was so continuous that it was impossible to turn off the lights. He submitted that under the Act once a customer was inside the shop there was absolutely no limit to the amount of light which could be put on. Counsel further contended that other shops in the neighbourhood had brilliant lights on after closing time in order to attract future customers. The appellant thought he had a right to indicate that his shop was a pharmacy. In dismissing the appeal with costs, Mr. Lawrie said the appellant had made no endeavour to close his shop in accordance with the law, and the conviction and fine must stand.

In the course of a paper on "The Attrition of Concrete Surfaces Exposed to Sea Action," read before the Concrete Institute, Mr. J. S. Owens said that the conditions governing the rate of attrition are extremely variable, the most important being the violence of the storms experienced. The coast of Sussex faces nearly south and the foreshore is covered with coarse flint shingle, varying in size from perhaps $\frac{1}{2}$ in. up to 4 in. in diameter. Under such conditions concrete near high-water mark made from flint shingle was found to wear away at the rate of about 4 in. to 6 in. in a year. Concrete made from Elvan granite blocks pre-cast and only set in the face work when well seasoned wore away in some cases to the extent of 6 in. to 1 ft. in four years. In another case, on the same shore, where the experiment was made of facing a seawall with flint boulders 4 in. in diameter, set carefully in the face close together, it was found that these boulders had been worn away in the course of about five years.

New housing schemes submitted to the Ministry during the week ended January 24 numbered 273. The total number of schemes submitted by local authorities and public utility societies is now 8,380, comprising about 60,000 acres. The schemes approved now number 3,942, and comprise about 33,500 acres. Eighty-one lay-out schemes were submitted and seventy-two approved during the week, making the total number of lay-outs submitted 2,348 and the number approved 1,610. House plans representing 4,851 houses were submitted during the week, and plans for 3,284 houses approved. The total number of houses represented in all the plans now submitted is 95,820, and in the plans approved 73,437. Tenders for 27,745 houses have been submitted, and approval given to tenders for 23,323. At January 1 work had started in connection with contracts for the erection of 10,408 houses. This number includes the cases in which preparatory work only had been begun; the number of houses in course of building was 4,485. In addition to these houses, the Ministry have knowledge that work was in progress at January 1 on some 5,000 working-class houses not included in schemes under the Housing Acts.

A process for producing bas-reliefs by photography is described as the fruit of the invention of an Italian scientist. The basis of the invention is the property possessed by a film of chromium gelatin of swelling in proportion to the intensity of the light falling upon it. The swelling is greater with a low than with a high intensity, so that the light passing through a photographic negative produces upon a chromium gelatin plate a positive in distinct relief. The transparency of an ordinary negative, however, is not truly proportional to the relief of the original model, but by an ingenious automatic device involving double exposure this difficulty is avoided and a negative is obtained having its lights and shades correctly graded to produce the effect of relief.

It is reported from Japan that there is being carved there the largest statue in the world, says the *Philadelphia Record*. It is a recumbent effigy of Nichiren, a Japanese patron saint, cut from a natural granite rock on a hillside in the Island of Ushigakubi, or the "Cow's Head," in the inland sea of Seto. This stone image, it appears, will be 240 feet long, 60 feet longer than the sleeping Buddha at Segu, Burma, and considerably larger than the Sphinx in Egypt. Nichiren, whose name means "Lotus of the Sun," was a religious teacher who lived in the thirteenth century. At one time he was condemned to death, but the headsmen's sword, the Japanese say, "was unable to decapitate him."

"Pitman's Business Man's Encyclopedia" (London, Sir Isaac Pitman and Sons, Ltd., 1, Amen Corner, E.C.4. Part 1, 1s. 4d. net) is a welcome change from the mass of Encyclopaedias. It is specially designed for the edification of the merchant, the commercial student, and the ordinary business man, and deals with the daily needs of the work of each in really businesslike fashion. Fifty specialists have contributed over five thousand articles, often illustrated, and all pertaining to the title of the book, which will be completed in 28 fortnightly parts.

A memorandum has been issued in which the Minister of Health has prescribed the conditions governing the making of grants under Section 1 of the Housing (Additional Powers) Act, 1919, and copies of this memorandum have been sent to each local authority. A stock of Certificates A. (A.G. 1) and B. (A.G. 2) is being sent to each local authority. The procedure to be followed by local authorities in granting certificates is fully described in paragraphs 5, 6 and 7 of the memorandum and the conditions on which grants are payable are set out in paragraphs 1, 2, and 3 of the memorandum and paragraph 4 which incorporates the first schedule. Particular care must be taken to secure that no certificate is issued with respect to any house with more than four bedrooms or which has a superficial floor area in excess of 1,400 ft. With regard to the issue of Certificate B., care must be taken only to issue this certificate when the conditions set out in that certificate are complied with and to enter the date of completion correctly. The column "Particulars of Houses" in Certificate B. must show (i.) the superficial floor area of the houses, and (ii.) the number of living and bedrooms, and (iii.) flattened cottages should be shown as such in this column. The Housing (Additional Powers) Act, 1919, is an emergency measure, and it will be noted that a rigid time limit for the completion of the house is laid down in the Act. Attention is drawn to paragraph 10 of the memorandum, which prescribes that the local authority shall give a serial number to the Certificates A. and B., and shall carefully preserve copies of the certificates issued. Paragraph 10 of the memorandum also prescribes that the local authority shall from time to time furnish returns to the Ministry in the form set out in Schedule 4.

At the meeting of the Birmingham City Council on Tuesday, Alderman Williams said he did not want to alarm the Council, but the estimates of expenditure already received from the committees, if they were accepted, would show an increase in the rates of 5s. in the pound, and that would make the full rates for the next financial year 17s. in the pound. The report of the Housing Committee was presented by Mr. Seward James, who proposed the acceptance of an offer from a London firm to erect 1,000 houses on the Quinton estate at prices ranging between £823 and £838 per house, and that the question of authorising the signing of the contract be postponed until the next meeting to enable them to negotiate with the Treasury and the Ministry of Health as to raising the money. He said that if the negotiations were not completed within a month the position of the committee would be impossible. They had been asked to hustle without being given the means to hustle.

New concrete floors are liable to break away at the surface, thereby producing dust. It is therefore essential to harden the con-

crete, and the following method of accomplishing this has proved successful:—The floor should be washed with a strong solution of soda to remove all grease, and then well sluiced with clean water and allowed to dry. The surface should be brushed with a solution of sulphate of iron so as to saturate the concrete thoroughly. This will fill up all flaws and cracks. After two or three days two coatings of linseed oil boiled with litharge in the proportion of a quarter of a pound of litharge to every eight or ten gallons of oil may be applied, twenty-four hours being allowed to elapse between the two coatings.

The Borough Council of Hammersmith have a full programme of housing. The Council have purchased all the available building land within the borough, an area of over 130 acres. One hundred houses are already in course of erection, and work will be commenced during the year on the building of at least five hundred more. These will be of brick, concrete, and terra cotta block construction. The roads and sewers on the housing estates will be constructed largely by direct labour. It is intended to demolish a considerable area of insanitary property and to replace this by model dwellings, laid out on town planning lines, incorporating all possible devices for the reduction of household work to a minimum. To meet the urgent demand for houses, pending the completion of permanent dwellings, a considerable number of munition huts, raised on piles, are being converted into "flats." All available empty properties within the borough are being surveyed, and, if suitable, are being purchased by the Council and converted into tenements by direct labour. It is probable that work will be commenced during the year on the construction of an ornamental promenade along the frontage of the River Thames within the borough. Blocks of high-class flats will be built directly fronting this promenade and the river.

Based on a report by Dr. Weizmann on his return from Palestine, a programme has been drawn up by the Zionist Organisation for immediate work in connection with the Hebrew University, the foundation stone of which has been laid on Mount Scopus, Jerusalem. It is proposed to establish a Physical Research Institute, a Chemical Research Institute, a Micro-Biological Research Institute, in a temporary building to be erected: two lecture rooms; a number of small rooms for lectures, administrations, etc.; and two reading and reference library rooms and a library. A start is to be made with a Hebrew Institute and a general course in arts. The plans for a range of buildings with a magnificent dome are now in London, and will shortly be made public.

Dr. Addison, Minister of Health, made a sporting offer to a deputation from the Trades Union Congress who waited upon him last Wednesday evening on the housing question. Pleading for the co-operation of Labour in the work of providing working-class dwellings, Dr. Addison said: "You have come to me, and I want now to be allowed to come to you. Let me come to your Trades Union Congress and put this matter before you." Mr. Will Thorne, M.P., at once clinched the offer. "Certainly you shall, as far as I am concerned," he replied, and an assurance was subsequently given that steps would be taken to give effect to the offer. Dr. Addison gave figures showing that there was a shortage of bricklayers, slaters, and plasterers. If all the available men in those classes were continuously employed, he went on, there would not be enough to build the 200,000 houses required. It was imperative that the Ministry should have the help of organised labour.

Negotiations for leasing Warwick Castle, the historic home of the Earl and Countess of Warwick, as an hotel or guest-house for American visitors, have fallen through. The proposal was that the castle should be used as a centre for the interchange of ideas between distinguished Americans and British people. But it was found that only thirty persons could be accommodated at a time, and that it would cost £15,000 to £20,000 to make the necessary alterations in the building.

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TENDERS.

*Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

BARNET.—For houses in Mays Lane, for the Barnet Urban District Council:—

Patman and Fotheringham, Islington	£61,471	0	0
Byford and Pickfill, Wealdstone	55,925	7	9
Jones, W., and Sons, Victoria Street	49,761	0	0
Miskin and Son, St. Albans	48,263	0	0
Richards, Alban, and Co., St. James's Street	47,421	0	0
Ekins and Co., Hertford	45,332	0	0
Slough, W., Barnet	44,262	0	0

(Or £30,580, exclusive of roads, sewers, etc., conditionally accepted.)

BIRLING, KENT.—For 10 cottages at Birling, Kent, for the Malling Rural District Council, W. K. McDermott, A.R.I.B.A., Council Offices, West Malling, architect:—

Cox and Co., Maidstone	£48,850	0	0
Landridge, R., Ham Hill, Kent	8,502	0	0

*Accepted.

BIRMINGHAM.—For 22 houses on the Billesley Lane Estate, for the Birmingham City Council:—

Roberts and Son, £25 per house (accepted).

BLYTH.—For 10 houses, for the Blyth Urban District Council. L. Leeper, R.E.A., M.I.C.E., surveyor:—

Swan, W., "Hampstead," Plessey Avenue, Blyth, Northumberland	£9,919	0	0
Waddie, R. S., Union Street, Blyth	9,900	0	0
Douglas, S. F. H., Waterloo Road, Blyth	9,400	0	0
Dover, J., 23, Hedley Avenue, Blyth	9,375	0	0

*Accepted.

GLASGOW.—For housing scheme at Kennyhill and Riddrie, Area No. 1, for the corporation. Accepted tenders:—

Train, J., and Taylor, mason	£139,921	3	0
Duncan's, Ltd., joiner	78,877	9	6
Turner, C., plumber	37,397	0	0
Rome, G., and Co., Ltd., plaster	13,437	10	0
Norfolk Decorators, painter	8,279	13	2
Bertram, M., Slater	6,940	18	3
Purdon, W., and Sons, glazier	2,637	11	3

LONDON, S.W.—For 96 houses or flats on the Holder-ness House Estate, for the Lambeth Borough Council:—

Higgs, F. and H. F., Ltd., Hinton Road, Herne Hill, S.E., £87,096 (recommended for acceptance):

LONDON, W.—For works at 28, George Street, Hanover Square, London, W.1. Albert E. Bullock and Jeeves, 141, New Bond Street, London, W.1, architects:—

Higgs, F. and H. F., Ltd.	£20,140	0	0
Dove Bros., Ltd.	28,945	0	0
Cubitt, W., and Co.	28,936	0	0
Hall, Beddall and Co.	28,520	0	0
Holloway Bros.	28,164	0	0
Higgs and Hill	27,984	0	0
Falkner, J. W., and Sons	27,683	0	0
Logan, E. J.	27,620	0	0
Smith, J., and Sons, Ltd.	26,347	0	0

*Accepted provisionally.

MALLING, KENT.—For 20 cottages on a site in Norman Road, West Malling, for the rural district council. W. K. McDermott, A.R.I.B.A., Council Offices, West Malling, architect:—

Martin and Newman, Maidstone	£19,621	0	0
Cox Bros., Maidstone	18,000	0	0
Knowles, A., Farningham	17,557	0	0
Dayison, J. A., West Malling	16,982	0	0
Brown, E. and W., Halling (four cottages only)	3,593	0	0

*Accepted.

POPLAR.—For 15 houses in Ridgale Street and Baldock Street, Bow, for the Poplar Borough Council:—

Reader, Hackney	£12,706	5	6
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*Accepted.

SWAFFHAM.—For 10 houses on the White Cross Lane site, for the Swaffham Urban District Council:—

Wilson, P., and Co., Wendling	£8,950	0	0
Hiperson, F. R., Trowse	8,750	0	0

*Accepted, subject to the approval of the Ministry of Health.

WILNCOTE.—For a new infants' school at Wilncote Two Gates, for the Warwickshire Education Committee:—

Musson, R., and Son	£2,585	17	0
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*Accepted.

LIST OF TENDERS OPEN.**BUILDINGS.**

Feb. 11.—For labour and materials required in erection and completion of houses under the Cheddle and Gately Urban District Council's housing schemes.—Tenders to J. H. Johnson, clerk, Council Offices, Cheddle, Cheshire.

Feb. 12.—For houses.—For the Staines Urban District Council.—Plans at the surveyor's office, Town Hall, Staines.—Tenders to H. S. Freeman, clerk, Town Hall, Staines.

Feb. 12.—For re-instatement and extensions to council office buildings.—For the Cleethorpes Urban District Council.—H. C. Scapling, Court Chambers, Grimsby, architect.—Tenders to A. S. Barter, clerk.

Feb. 13.—For works required in erection of new car depot, at Reedyford Nelson.—For the corporation.—Particulars on application to the borough engineer and surveyor, Town Hall, Nelson.—Tenders to J. H. Baldwin, town clerk, Town Hall, Nelson.

Feb. 14.—For 64 houses.—For the Gosport and Alverstoke Urban District Council.—Housing Director, E. A. Tyler, M.S.A., "Rostellan," Stoke Road, Gosport, Hants.—Tenders to the clerk to the council, Council Offices, Gosport.

Feb. 14.—For 88 houses, at Crossens, Southport.—For the Corporation.—Tenders to A. E. Jackson, A.M.I.C.E., borough engineer, Town Hall, Southport.

Feb. 14.—For 42 houses on The Green, Hythe, in three types.—For the Corporation.—J. S. Green, borough and water engineer, 114, High Street, Hythe.

Feb. 14.—For 134 houses upon Elgam Farm, Blaenavon.—For the Blaenavon Urban District Council.—Tenders to I. G. Gwyn Thomas, clerk.

Feb. 14.—For houses in connection with their housing scheme, section 4.—For the Harrow-on-the-Hill Urban District Council.—Tenders to J. Strachan, clerk, Council Offices, Harrow.

Feb. 14.—For 10 cottages in five blocks of two.—For the Hemel Hempstead Rural District Council.—T. H. Lighbody, M.S.A., 20, Marlowes, Hemel Hempstead, architect.—Tenders to L. Smeethman, clerk, 1, The Broadway, Hemel Hempstead.

Feb. 16.—For a new diphtheria block and a verandah to the scarlet fever block at the Hospital Board's Isolation Hospital at Woodbridge, Guildford.—For the Guildford, Godalming, and Woking Joint Hospital Board.—J. H. Norris, 51, High Street, Guildford, architect.—Tenders to W. S. V. Cullerne, clerk, Commercial Road, Guildford.

Feb. 16.—For 138 houses.—For the Leek Urban District Council.—W. E. Beacham, surveyor, Town Hall, Leek.

Feb. 16.—For additions to porter's lodge.—For the guardians of Auckland Union.—Kellett and Clayton, P.A.S.I., 87, Newgate Street, Bishop Auckland, architects.—Tenders to S. Adams, clerk, Union Offices, Bishop Auckland.

Feb. 19.—Alterations and additions to the Education Offices, Nos. 15 and 16, John Street, Sunderland.—For the Town Council.—Tenders to H. Craven, town clerk, Town Hall, Sunderland.

Feb. 20.—For 26 houses in connection with housing scheme, first contract.—For the Baildon (Yorks) Urban District Council.—P. Turner, A.R.I.B.A., architect, 23, Bank Street, Bradford.—Tenders to J. Bentley, clerk, Council Offices, Baildon.

Feb. 24.—For working-class dwellings.—For the Godstone Rural District Council.—Tenders to C. Phillips, clerk, Council Offices, Oxted.

March 5.—For repairs at the Guardians' Institution in Warren Road, Guildford.—For the guardians.—E. L. Lunn, 36, High Street, Guildford, architect.—Tenders to W. S. V. Cullerne, clerk, Union Offices, Commercial Road, Guildford.

Owing to the housing difficulty East Elloe (Holtbeach), Lincolnshire, Council is taking steps to acquire four disused chapels for conversion into dwelling-houses. Spalding Council intends taking over a disused Wesleyan chapel at Pinchbeck West for housing purposes.

E. C. Bayer, 110, Norrevoldgade, Copenhagen, has applied for a British patent, not yet accepted, by which pumice-stone is rendered suitable for use in the manufacture of a light concrete for shipbuilding, etc., by crushing and heating to a temperature of about 1000 deg. C. or higher up to the melting-point, or the pumice may be heated before it is crushed.

Messrs. Brinsmead and Sons, Limited, the pianoforte makers, are closing their factory at Kentish Town, owing to loss on production, due largely to the increases in wages.

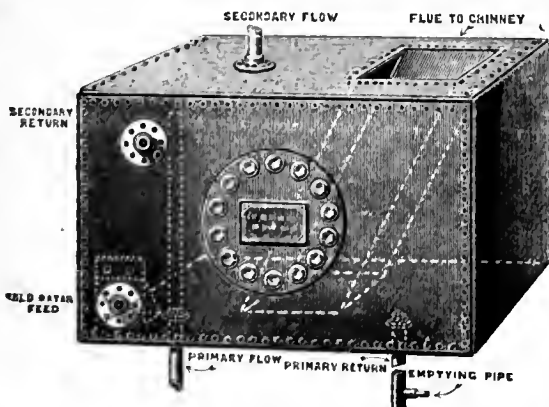
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THE BUILDING NEWS

AND ENGINEERING JOURNAL.

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mouth. Sir T. G. Jackson, Bart., R.A., Architect.
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Working Drawings of a House at Gerrard's Cross for Mr. Robert Dredge. Mr. Edgar Ranger, Architect.
Hampton Court, Lynn Regis, Norfolk. Sketch by Mr. R. Scott Cockrill.

Currente Calamo.

The *Times* truly enough says:—"The keynote of the meeting of Parliament on Tuesday was struck by Sir Donald Maclean, who said that the time for Coalition 'had come to an end, and the need now was for a newly-elected body fresh from the electorate.' That is certainly the feeling of an increasing section of the nation." The King's Speech from the Throne was again unusually long, and covered a programme which is utterly in excess of the capacity of this Parliament. The declaration that if the prices of foodstuffs and other commodities are high, they are "appreciably lower than elsewhere," is poor comfort, for the public are rightly convinced that prices are higher than they ought to be, and that the prime cause is the Government's extravagant expenditure. The Bills which the Government hope to introduce will deal with Home Rule, the coal-mining industry, the liquor trade, the production of foodstuffs, the fishing industry, the organisation of the Army, insurance against unemployment, the regulation of working hours, the minimum wage, and "dumping." At the fag-end of the list comes a measure for "the creation of an adequate supply of electrical and water power," the prospects of which are doubtful, and one for the reform of the House of Lords, which will hardly be reached this session. The Speech was chiefly remarkable for its omissions. Not a word was said upon finance, upon the need for public and private economy, or upon the proposals of the Government for reducing their expenditure. The housing question, which absorbs the attention of so many citizens, was completely ignored. That will surprise nobody, and little more so the collapse of the ill-digested scheme. The Prime Minister certainly said one true thing. Mr. Adamson complained that the Speech made no mention of the disabilities under which discharged sailors and soldiers still suffered. Mr. Lloyd George retorted that there were 350,000 soldiers eager and willing to work, but that the way was blocked by the refusal of the trade unions to suspend their regulations. That is a disgrace to trade unionism which any Government must share if it does not stop such unpatriotic tyranny.

Some months ago a good deal of adverse criticism was aroused by a statement made by Captain K. G. Kiddy, assistant secretary of the Society of Architects, in a press interview, to the effect that the Society's Appointments Register showed at that time a demand for qualified architects' assistants in excess of the supply. These critics suggested that there was little or no demand for architects' assistants, whereas the supply was practically unlimited. Probably they had in mind the "unemployable," and also overlooked the fact that the statement was confined to the position of affairs as revealed only by the Society's Register. However that may be, it is interesting to note that since then the Society has dealt with demands for capable assistants from upwards of ninety employers, and that the large majority of these vacancies have been filled by candidates selected from ex-Service architects who sought the Society's help largely as a result of the Press publicity given to the matter. This Register is maintained at the expense of the Society, and all service has been rendered gratuitously to the many candidates who have benefited by it, the measure of whose gratitude may be weighed from the fact that the Society has during the period mentioned received one letter of thanks! The use of the Register, which was for the time being open to all architects, is now restricted to members of the Society, it being felt that the requirements of other architects may be met by other organisations.

A special conference of building trades operatives was held at Manchester last Friday to discuss the housing problem. All the unions connected with the Federation were represented, and the deliberations lasted all day. The proceedings were private, but the president of the Federation, Mr. George Hicks, and the secretary, Mr. William Bradshaw, communicated to the Press the resolutions adopted. From these it is evident that the Federation will oppose dilution to the utmost of its power, but it is prepared to enter into arrangements with the employers for a longer working week than forty-four hours where men are engaged on building houses. The first resolution was as follows:—

To the suggestions, frequently given publicly in the Press, that the rules and customs

of the building trade unions are responsible for delay in the erection of houses, we offer our unqualified denial, and in proof of this we hereby instruct our Emergency Committee to open up immediate negotiations with the National Federation of Building Trades Employers, with a view to making arrangements whereby any limitation imposed by the application of the 44-hour week agreed to by the National Conciliation Board may be relaxed on housing schemes.

The declaration against dilution, which is about as drastic as it could well be drafted, was as follows:—

This conference, after carefully considering the proposal of the Prime Minister to augment building trade labour, expresses its intention to abide loyally by the agreement for the training of disabled sailors and soldiers, but regards any further extension of dilution economically unsound; and we hereby resolve to resist the dilution of building trade labour with the utmost strength of our organisation.

While that attitude is maintained it does not seem of much use to make contracts with direct labour, either by the media of "Guilds" or other combinations. Labour, numerically, is admittedly inadequate, and cannot guarantee dispatch, and yet refuses necessary reinforcement by even temporary aid simply that it may keep the country short-handed in this its present greatest need!

The exhibition of some of Jacob Epstein's latest sculpture at the Leicester Square Galleries only numbers sixteen examples, but it will well repay inspection by all who can appreciate real sculpture and have not been biased by any of the critics of his "eccentricities." Some of them, we notice, are already shocked at the "Christ" (1), a bandaged figure just risen from the tomb, because it is so unlike the conventional representations of the subject. We do not understand why. As the embodiment of Epstein's conception of an historical character, its impressiveness is undeniable. Many, perhaps, will not share that conception, but there is nothing that is repulsive, and certainly nothing out of character with the symbol that associates the bandaged figure with the Crucifixion. "Nan" (2) will attract all. No. 3 is a head of Mrs. Jacob Epstein. No. 4, "Gabrielle Saone." No. 5, "Lilian Shelley," is a second of the sitter, and one of the best things Epstein has done; scarcely less perfect is No. 6, "Betty May." The "Portrait of a Lady" (7) is good, and so are the "Head of a Girl" (9), "Helene" (10), and the bust of "An

American Soldier" (11). The bronze "Portrait Bust of Miss Marguerite Nielka," niece of Lord Cowdray, is said to be one of Epstein's favourite pieces. The "Four Studies of a Babe" (13 to 16) are sure to be appreciated by child-lovers. The variations of mood are admirably caught and expressed, and, altogether, they will be the most popular things in the exhibition.

An interesting feature of the tenth exhibition of the Seneffelder Club, at the Leicester Galleries, Leicester Square, is a hitherto unknown but characteristic drawing on the stone, "The Potato Gatherers," by Jean François Millet. The stone has been in the possession of the artist's family ever since it was worked on. An impression has been taken from it, and is shown, together with the stone. Two other prominent exhibits will be Manet's large lithograph of "The Balloon," of which only three impressions exist in the world; and Mr. Augustus John's first essay in lithography, "The Tinkers." There are 146 exhibits altogether, and the collection embraces lithographs of foreign and historical interest, in addition to works by members of the club and other English contributors. Among the foreign, which are mostly hung in the entrance gallery, are several exceedingly fine productions, including "Macbeth," by Delacroix; "Très hautes et très puissants," by H. Daumier, humorously satirical about the wearers of crowns and coronets; and two impressions of Fantin Latour's "Venus et l'Amour," one a 1st state with dedication, and the other a 6th state with dedication. As a whole, the exhibition is one of the best the club has organised.

THE HOUSING PROBLEM: ITS GROWTH, LEGISLATION, AND PROCEDURE.

We have read with considerable interest the closely-packed volume of some 550 pages, by Mr. John J. Clark, M.A., F.S.S., issued under the above title by Sir Isaac Pitman and Sons, Ltd., 1, Amen Corner, E.C.4, at a guinea net, and confidently advise its purchase and perusal by all concerned; and especially by members of local authorities, who seem to us, for the most part, judging by the reports of their Councils, which we condense week after week in our news columns, lamentably ignorant of the scope and purport of their powers and responsibilities. Not more so, perhaps, in some respects than the ordinary citizen, who, if he will take the trouble to read it, will or should close the book feeling heartily ashamed of himself. For he will discover that for years past he has been armed with powers, which only his own laziness and want of public spirit have hindered him from exercising, and that his bad citizenship is about to be visited on his children and children's children unto the third and fourth generation, who, if we last out as long as a nation, will have to account heavily enough for the sins of their forebears.

There are a few of us, probably, who can plead not guilty, if only of the most culpable ignorance. The man in the street and his mentors of the scrap newspapers seem alike appalled at the

disastrous extent of house shortage, and to regard it as a comparatively new thing, the truth, of course, being that it has been more or less rampant for the last hundred and fifty years, and that each generation has had in its turn to pay the penalty in person and persons of the blindness and selfishness of those who entailed it in ever-increasing severity on those that came after. Section I—in many respects the most informative in Mr. Clark's book—establishes this fact beyond question. It is true, of course, that the last ten years have witnessed an unprecedented aggravation of our sufferings due to Mr. Lloyd George's Finance legislation of 1909-10, and to the huge burdens with which the war has saddled us and our posterity. But as Mr. Clark tells us:—

"During the greater part of the period which elapsed between 1760 and the passing of the Public Health Act of 1875, those responsible for the government and administration of our cities seem to have been blind to the need for the exercise of forethought and care, and as a nation we entered upon a period of growth and change quite unparalleled in our history, without any kind of governing principles of town development, and with an almost complete absence of responsibility for good administration. The nation was hopelessly unready for the new order of things. Political philosophers were committed to a policy of individual liberty exaggerated until it meant social anarchy. Landlords and manufacturers were eager to build up fortunes, and, whilst tenacious of rights, were forgetful of duties. Municipalities were so ineffective and corrupt that in 1835 a Municipal Corporation Act had to be passed to lay anew the foundations of good municipal government. The people were so careless of their homes that one searches almost in vain in the records of the earlier labour unions for any word of protest against the squalor of the streets and alleys in which the working classes lived."

All honour to the philanthropists and social reformers who began the battle during those gloomy first three decades of the nineteenth century, in which it took our legislators 25 years to reduce the hours of labour of a child of nine to sixty-nine a week, and that only in cotton mills; but, beyond all doubt, a more solid tribute of remembrance is due to the sanitary reformers who, during the last fifty years of that century, compelled the legislature to pass a succession of Health and Housing Acts, and sent down the steadily-declining death-rates. The Acts we refer to included the Public Health Act of 1848, which included Local Boards of Health, followed by various others in 1855, 1863, 1866, 1868, 1870, 1872, and 1875. That this legislation saved many millions of lives, and placed England in the forefront of the nations as far as sanitation went, is one of the most creditable items of the history of the Victorian age. Let it not be forgotten, either, that of all the great towns Liverpool justly claims to have been the first to obtain an Act of Parliament for the compulsory lighting, cleansing, and watching her streets, rapidly followed by other Acts in 1846 and 1864. Appendix A, which Mr. Clark devotes to a special record of Liverpool's primacy in sanitation, and her battles with slumdom later, is well worth careful study.

Lord Shaftesbury seems to have been the first to tackle the housing problem in a practical fashion, and the result of his agitation was the formation of the Labourers' Friendly Society, of which the Prince Consort was chairman, which aimed at the creation of a standard of housing for the working class. In 1851 he succeeded in passing both the Common Lodging Houses Act and the Labouring Classes Lodging Houses Act. The

Torrens Acts followed, but not till fifteen years later. The first, introduced in 1866 by its author, was sent to a Select Committee, but the Derby-Disraeli Ministry fell almost immediately, and the new Conservative Government took the matter up vigorously, and placed a remodelled version of it on the Statute Book in less than a year. The Torrens Acts, which followed, from 1868 to 1882, were the foundation of all subsequent legislation—limited enough in their application, but steadily educating public opinion to a sense of further effort. In 1884 the Royal Commission on the Housing of the Poor was appointed, and the Act of 1885—known as the principal Act—was passed, which consolidated all legislation from 1851 to 1885; and which, with the amending Acts of 1900 and 1903, constituted the chief legislative measure for housing reform. About subsequent legislation there is no need to say much here; Mr. Clark details it with many well-grounded comments in Section II., which is full of present interest. It began with John Burns' Housing and Town Planning Bill of 1908, it has ended with the Acts of 1919, under which we are struggling through the ditches and over the hedges like blind sheep led by blind leaders whose want of vision and hesitancy of purpose compare so unfavourably with the persistent and consistent battle put up by some of the early pioneers.

Sections III., IV., V., and VI. deal successively with the growth and development of housing schemes in the past, the present position, some factors relating to the increased cost of housing, and a summary of the problem. Section VII. is an effort to discover its solution. How far it is a successful one we must leave readers to judge. They will agree, at any rate, with his final conclusion, on p. 296, that "the answer to the economic aspect of the problem is, it is true, another problem, and probably a much more complex one, involving almost the whole range of economics, viz., increased wages, reduced prices, and increased production." It has, indeed, proved such, and the misfortune is that the solvers have, so far, shown no evidence of ability to grapple with that! Not that we can wonder much at it. As Mr. Clark truly enough says on p. 294:—

"There is need of a generous and persistent cultivation of betterment in the mind and heart of the individual citizen in every rank and walk of life and society. It is useless to promote social reforms by giving high wages, or permitting immense profits to the unregenerate of any class of society. They only squander them in animal gratifications. It is useless to sweep away slums if the defects of character—whether in landlord, builder, or inhabitant—which originally created them, remain. There are thousands of people in this country who, if transferred from their present slums to the West End, would convert it into a slum within a month."

While this is so we have little reason to expect a better Government than we deserve, or more able administrators than it selects. Beyond doubt as Mr. Clark puts it:—

"A new standard of production is necessary in all trades and industries. The employers must recognise their responsibilities in this connection. It is of no benefit to restrict the landlord's action in increasing the rent of houses when the landlord is the victim of the trusts and combines in the building trades. The worker must be educated to realise that the present ineffectual output is detrimental to his own interests. He must be taught to appreciate the fact that the present cycle of increased cost of commodities followed by bonuses on wages, which further increase the cost of living, is of no real benefit to him. It is incumbent upon all to redouble their activities and increase the productivity of field, factory,

workshop, and office. Above all must be cultivated the true standard of citizenship. So long as there is a deficiency in excess of what we were accustomed to, so long must some of us, and especially the poorer members of the community, feel the pinch occasioned by the late devastating war. For nearly five years we have been consumers, and not merely consumers but destroyers. The fields of many lands have been soaked with the blood of the bravest and best of our youth. Is it too much to hope that, in the days to come, there shall be given "beauty for ashes and the oil of joy for mourning," and that all citizens shall so rise to the sense of their responsibilities that we may indeed "build Jerusalem in England's green and pleasant land."

A WORKMEN'S EFFORT TO REDUCE RENTS.

A feature of the Conference of the National Association of Trade Union Approved Societies in Manchester was an address on February 5 by Councillor R. Coppock, of the Operative Bricklayers' Society, on the housing question.

Dealing with the subject from the point of view of public health, he said, he was ashamed of the jerry-built houses he had been compelled through pressure of economic circumstances to help to build in the days when he was a bricklayer. There was now an opportunity through our municipal authorities and the Ministry of Health to build houses fit for the people to live in. We were to have twelve houses to the acre, as against, in some instances, 60 to the acre in the "good old days" that were passing. The question of housing was no longer one for the speculative builder. The speculative builder was credited with having solved the housing problem before the war, but he had done it in such a way as to make up largely a C3 nation. The fact that we were largely a C3 nation was due in the main to bad housing and bad sanitation. In the past too little attention had been paid to drainage. Alluding to the need to build 20,000 houses in Manchester, Councillor Coppock said the building contractors and those who supplied the material were asking such high prices that for the working classes an economic rent was absolutely impossible.

The position was serious. It would now cost £1,000 to erect a house which before the war would have cost only £250 or £300. The supply of building materials was in the hands of a ring. There was the cement ring, which had a representative in the House of Lords, and there was the brick ring. Before the brick ring was formed in Manchester the price of bricks was from 18s. to £1 a thousand. Immediately the ring was formed the price rose to 26s. a thousand; to day it was 80s. The only hope that he could see of the erection of houses at something like reasonable prices was by the operatives themselves taking over the building for the municipality. The desire of the new operatives' Building Guild was to get down to rock-bottom prices. They could build houses at a cost which would permit of a lower rent than would be charged if the work were left to the private contractor. "We have resolved," he concluded, "that nothing shall stop us from concentrating all our energies on the erection of houses for the people."

A resolution was passed urging the Government to force the municipal authorities to proceed at once with the erection of working-class houses.

The Italian Government is offering two blocks of Italian marble to be used in the building of the new County Hall, and the offer has been cordially accepted, the Council expressing the appreciation of this token of the good will and amicable relations existing between the two nations. It is proposed to use the marble for fireplaces.

At the last meeting of the Staines Rural District Council the surveyor reported that the plans, etc., of several sites which would provide eighty-four houses had been fully approved, and sites and plans for forty-four more houses had been provisionally approved. Four different types of semi-detached cottages were provided for, and also blocks of four cottages. The cost of the houses ranged from £890 for the largest and most expensive to £750 for the smallest and least expensive.

A BASIC SCHEME FOR THE DEVELOPMENT OF LONDON.*

BY G. A. T. MIDDLETON, PAST VICE-PRESIDENT.

A little more than nine years ago it was my privilege to read a paper before this society, in which I drew attention to the possibility of utilising the present high-level railway which connects Cannon Street and Charing Cross Stations as a broad roadway, while substituting a new station on the south of the Thames for those which would be destroyed. As then presented, the scheme was crude and nebulous. If I remember rightly it was hurriedly prepared, though I now forget upon what emergency, and shortly afterwards I was taken ill, and remained unable, for that and other reasons, to do anything more in the matter until now, when the Council has kindly allowed me to revive it. How much further it may be possible to go in a single evening remains to be seen.

Elementary as the proposals then were, however, they attracted much attention and received a considerable measure of support, particularly in the Press. The congestion of London was notorious, and anything which offered a means of its amelioration was certain of at least some consideration, but apparently the time was not ripe for dealing practically with the evil upon a sufficient scale to effect a remedy. Now I believe that the time has come, for much has happened in the intervening period to prepare the way.

Even before 1910 there had been several schemes propounded for the substitution of a handsome road bridge at Charing Cross for the existing hideous railway bridge, and the transference of the station to the other side of the river, the first of these, I believe, being published in *THE BUILDING NEWS* when the roof over the station fell down in 1905. The aesthetic argument was almost the only one advanced, no great relief to traffic congestion could be shown, and the interests of the dominant South-Eastern Railway were in opposition. There have been further schemes brought forward since, some of them of great interest and value, but all with the same limitations, or nearly so, and nothing has been done.

Another partial solution of the problem, also projected in 1910, has been that of erecting an additional bridge across the river opposite St. Paul's Cathedral. Powers for this were sought by the Corporation of the City, who undertook to bear the cost, and work was commenced upon its approaches, but abandoned shortly after the outbreak of war. This may prove fortunate, for although it would provide additional communication, much needed, between North and South, it would still further congest the already congested points at both its extremities, viz., the junction of Cheapside with Aldersgate Street, and the Southern road junction at the Elephant and Castle; and it would do this at great cost, at the risk of damage to St. Paul's, and at the certainty of delaying, if not preventing, the adoption of anything more comprehensive.

And something exceedingly comprehensive is demanded. It is not a mere matter of undue concentration of traffic at a few points. What is wrong is something infinitely greater: excessive congestion of the heart of London itself. Expansion of the heart is vital; and next to it, intimately connected with it, is the immediate necessity for better arterial means of communication between the heart and the great body of outer London, not in one direction only, but in all.

All this, I venture to claim, my scheme either directly provides for in itself or renders possible and even inevitable: at great cost—fabulous cost—certainly, but also at fabulous profit which would justify the cost.

THE SCHEME GENERALLY.

The engineer who laid out the South Eastern Railway recognised that the nearest route from the City and the West End of London lay along a chord which cut off the bend which the river takes, and he set out his loop line from Cannon Street and Charing Cross accordingly, crossing the river twice. He avoided undue interference with the main highways of South London by

carrying this loop line upon arches, and at the same time he raised it to a height which provided ample fairway under the river bridges, and at the same time brought his great termini to the level of the Northern river bank or a little higher; for both at Cannon Street and at Charing Cross the stations are reached from the main roadways up inclines.

With efflux of time and the coming of the Underground, this loop has largely lost its value as a railway, for few persons indeed now use it in order to pass, say, from Whitehall to the Mansion House. But if it were converted into a roadway it would be invaluable. It would be worth the outlay over its purchase and conversion, even if there were no return—a point upon which I shall speak later—if it did no more than provide an alternative East and West traffic route to those already existing along Holborn, Fleet Street and the Embankment. But it would do a great deal more than this, for by means of easily contrived slope ways on either side, it would open up the whole of the land within the road and the river, and a great deal also to the South of the road—land which at present is covered by mean dwellings of slum character. The heart of London would there find the means of expansion for which it is now panting!

The sloped ways Southwards would also allow the road to be used by much of the through North and South traffic, which the existing bridges and their approaches are inadequate to carry.

But even this is not all. There is another railway bridge over the Thames at Blackfriars belonging to the S.E. and C. Railway which is approached upon arches at a higher level still, and is connected by curves, very rarely used, and the loop line. The main double track across this bridge is used mostly for through goods traffic, and is of great importance, but it would not be an impossible feat to utilise the curves and to convert the rest of the bridge into another roadway connected with the first, carrying it right through Blackfriars Station and opening into a Circus in front of the Central Criminal Court. There would also be a sloped approach from the bottom of Queen Victoria Street, where St. Paul's Station now stands.

In this way three new bridges for vehicular and foot traffic would in all be provided across the Thames, each of them wider than any of the existing bridges, without obstructing the river more than at present and at little, if any, structural cost, except for embellishment.

South London would be fully opened up, and ample means of both local and through communication established. London's heart, which is the nation's heart, which is the Empire's heart, would be able to expand old function again, it would be worth, the cost.

In order to recoup the expenditure I suggested in 1910 that not only would the valuable sites released by pulling down Charing Cross, St. Paul's, Blackfriars, Holborn, and Cannon Street Stations become available for sale or lease, but that there would be ample room upon the bridges for shops upon one side or both sides of the roadway—which, by the way, would have incomparable river views, making them of great value. Further than this I advocated the purchase of small property on each side of the new high-level road, and the creation of parallel low-level roads, with shops rising therefrom, with both low and high level frontages, and with storage accommodation in the existing arches under the road. Altogether, I then estimated that some ten miles of new frontages would be created, but now, with the additional approaches shown on the accompanying plan, and with the continuation of Stamford Street as a direct through way to London Bridge, this would more nearly approximate to seventeen or twenty miles. Nor do I see any reason for stopping there. Once the district is opened up, as it would be by the suggested roads, it would pay in every way to replace and rebuild, with discrimination, the whole disreputable triangle between the Thames, Waterloo Road and the Borough High Road. More housing would be provided under infinitely better conditions, more

*Read before the Society of Architects, February 12, 1920.

round Southwark Cathedral, and to materially improve the Vegetable Market, while at the same time providing two sloped ways for vehicular traffic from the High Level Road—one to the Borough High Road on the South, and the other to London Bridge itself. Further than this, direct East and West communication at the low level should be opened up, past the Cathedral, with the suggested extension Eastwards of Stamford Street.

CANNON STREET.

At the North end of Cannon Bridge I suggest that the main central approach should be supplemented by others from the North-East and North-West respectively. The former of these would almost wholly relieve the present undue congestion of traffic over London Bridge, while the latter would pick up so much of that now passing along Aldersgate Street as would not preferably go by Giltspur Street to the projected High Level Blackfriars Bridge. In this way, St. Paul's Bridge would be rendered unnecessary.

The direct approach from the North, as indicated on my plan, ends abruptly in Cannon Street Station Yard, while only a little distance further North is the most congested point in all London, the Bank crossing, crying aloud for relief; and it is questionable whether something drastic would not sooner or later have to be done here. I mean, that it may well become necessary to pull down the Mansion House and cut a clear way through. A new site for an enlarged Mansion House could be found where Cannon Street Hotel stands.

Cannon Bridge, like the others, would have houses or shops on it beside the roadway.

BLACKFRIARS AND HOLBORN.

The direct northern approach to the new terminus, over the present railway bridge at Blackfriars, part of the great width of which would still have to be reserved for railway metals as already mentioned, would be mainly valuable in collecting southward and disseminating northward traffic by way of Gray's Inn Road and Holborn in the one direction, and by Giltspur Street in another—possibly widened and replanned, though this is not indicated. Most of this would be through traffic, though the terminus would thus be directly served from a large northern area, from which access to the present termini of our southern railways is now extremely difficult. A clear way round to King's Cross and Euston, even, would not be a difficult thing to evolve.

THE INTERESTS INVOLVED.

Having now explained my scheme in such detail as the time at my disposal will permit, it becomes necessary to consider briefly what interests would be involved and to what extent they would be affected. And of these the public interest is paramount; and under this heading I do not mean the interest of Londoners alone. Directly or indirectly the whole world is involved, so great is the need for the proper development of the world's trade centre. Without it, in some form or other, the centre must inevitably be transferred elsewhere.

The ultimate custodian of this interest is Parliament, and it may be relied upon to pass into law any Bill for which a good case is made out.

The local custodians are the Corporation of the City of London, the London County Council, and the Borough Councils of Holborn, Westminster, Lambeth, and Southwark. All of these important bodies are alive to their responsibilities, and, I believe, are willing to shoulder them, whether individually or in concert. They would do so even if great expense were involved with no other return than public convenience, as the Corporation have shown in the matter of St. Paul's Bridge. But it is far otherwise with this scheme, provided that it be not carried out piecemeal and spoilt. The monetary return, as already pointed out, would be upon a gigantic scale.

Apart from this, all the bodies named, with the possible exception of the Westminster City Council, would benefit in the increase of rateable values within their areas. Even Westminster would probably not lose in this respect, but if it did, I feel sure that it is patriotic enough, as it is certainly

wealthy enough, to bear the loss with equanimity.

The great private interests concerned are those of the railways. These are trading concerns which cannot be expected to do otherwise than look closely after the dividends of the shareholders. All dealings with them would have to be upon a purely business footing, and each is differently involved.

The London and South Western is in the happy position of being able to sit still and do nothing, while other folk go to the trouble of providing its terminus at Waterloo with infinitely improved approaches. It stands to gain in every way, but it is doubtful whether it will do much in the way of initiative.

The position of the South Eastern and Chatham has already been fairly well discussed. It would doubtless claim heavy compensation for the loss of five stations, two of which are main termini, and also demand large sums for the arches and river bridges and other structures (including two large hotels which it now owns and which it would have to part with). The provision of the great New Terminus, with possibilities of expansion, would doubtless be accepted in part payment, but the Company would surely drive the hardest bargain possible short of carrying it so far as to permanently wreck the scheme. For in the long run this railway would stand to gain as much as any other by the full development of South London and the opening up of direct through communication roads, and its Directors are astute enough to recognise it.

The London, Brighton and South Coast, if provided with a good modern station, having the possibility of expansion, in place of that at London Bridge, or as supplementary thereto, would have little to grumble at. Like the South Western, it would probably sit tight, accept the benefits conferred upon it, and (except that it would struggle to retain the London Bridge Terminus for suburban traffic) would say little.

The tube railways need little said about them. They would soon meet the new conditions by extensions which, to be devised to the best advantage, should be planned when fully developed drawings for the other alterations are prepared. The time for this has not yet come.

THE MEANS OF ACCOMPLISHMENT.

Now, having got so far, how can this great matter be put in hand and carried through to conclusion? It is of little use to indicate a great public improvement, and even to show that it would bring profit to its promoters, if no method for accomplishment could be found.

To my thinking there are four alternatives:—

- (1) Direct Government action, as a National matter;
- (2) Action by the great local authorities already mentioned, in combination, under the Town Planning Act;
- (3) Action by one or more of the railway companies concerned as a private commercial venture under special powers;
- (4) The formation of a special Limited Liability Company for the purpose, also under special powers, in which all the public and private authorities concerned would be large shareholders.

Personally I dislike the idea of State action. It will be said that that is no valid argument against it, and I agree; but I believe that my opinion would be shared by the vast bulk of my fellow-countrymen, in spite of the present outcry for the nationalisation of everything and everybody. We do not want the most gigantic building enterprise in the world to be a Government monopoly on the one hand; and on the other I feel sure that the taxpayers of Manchester and Glasgow would object to pay for even the greatest improvement scheme for London. This happens to be both building enterprise and improvement scheme in one.

The City Corporation and the L.C.C. in combination, and with the co-operation of the borough councils concerned, could carry the scheme through under the Town Planning

Act, as it stands; or if additional powers were necessary, these could doubtless be secured. The adjustment of costs and profits would present difficulties, and the railway companies might have to be dealt with as opponents. But it is a possible way, and not to be dismissed cavalierly.

Another possible way would be for the South-Eastern and Chatham Railway to take the matter up as a business proposition, much as seaside resorts have at various times been developed by the railways most intimately concerned with them. The position of this company is very strong. It already possesses the material of the roadway and the bridges; it would have few great compensation claims to meet; and it could without doubt obtain the required powers if it were to produce a fully considered plan, and raise the necessary capital. Let the directors, I suggest, go into the matter carefully, carrying it much further than I have been able to do, so as to ascertain with some approximation to accuracy the probable cost, the probable return, the probable saving in administration, and many other probabilities which full investigation would disclose. The *prima facie* case is, I think, strong enough to justify the investigation at least, and the expenditure upon it of a sufficient sum to disclose all difficulties and possibilities. And if the one company does not feel strong enough for the task, let it invite the co-operation of the L.B. and S.C. and the L. and S.W. Railways also. In these days of great combines, either in entirety or for special purposes, this is by no means an impossible suggestion—especially just now, when the railways have become accustomed to working together under joint management, and when even the amalgamation of all of them permanently under direct Government control is being mooted.

The fourth alternative, the formation of a great new Corporation or Company with specific powers, would enable the great Local Authorities and the Railway Companies to act together, neither levying mail upon the other, but all taking shares upon some agreed ratio, paying for them in either land or material or cash, and then raising the balance needed from the public by subscription in the usual way. The formation of such a company presents difficulties, but not insuperable ones; and perhaps one of the greatest of these is that of finding the necessary driving force for its initiation. Who, for instance, is the one person, or what is the one body, which could be looked to with confidence to do the initiating work of exact planning and computing, of gathering the various conflicting interests into harmony, and of producing a prospectus which was honest and clean?

CONCLUSION.

This brings me to my final suggestion. The one person to act is the Minister of Transport. He possesses the power, and ought to exercise it: he has the driving force, and he should employ it. And the means to that end which he could most efficiently and most expeditiously employ would be a Royal Commission, provided not merely with the right of sitting evidence, but with definite instructions and ample means for the preparation of complete and detailed plans and estimates first, and subsequently instructed to report as to financial prospects and as to the means to be eventually adopted for bringing the scheme to fruition.

It is to the Minister of Transport that I appeal.

Doubtless many will say that the present is not the time to launch a great building proposal such as this, when all available labour and materials are needed for the provision of housing accommodation, and when there is the dual cry for economy and production all round.

My answer is that these are all arguments for going ahead with this scheme at once and with all possible speed. As I said at the outset this evening, London's heart must be given room to expand and the means to function properly or the whole nation, and even the whole Empire, must suffer. It is a primary necessity, upon which almost all else depends. Further than this, owing to the existence of the bridges and the main roadways at the present time, the amount of

labour and material required anew is remarkably small. Further again, the scheme itself provides largely for new and additional housing accommodation right in the very heart of things, and not miles away in distant suburbs. And further again, little need be purchased abroad of all that would be required, save food for the workmen, and that in less proportion than formerly, and it is to be hoped soon in less proportion still; for I do not consider that food brought from our great Dominions is purchased "abroad."

Sooner or later the work must be done. If done now, it can be done as a whole and economically. If it be deferred it will still be done, but little by little, bit by bit, with many mistakes and constant adjustments and infinitely greater cost and much more worry. The economy is to do it once and do it well. And it is the only way to make it pay. To niggle with it, first building an unnecessary St. Paul's Bridge, and then dealing with Charing Cross as if nothing else mattered, is to incur loss all round and all the time.

Let us do it now, and do it thoroughly, economically and profitably.

Our Illustrations.

THREE FIGURE "TIME SKETCHES" AT THE LANGLEHAM CLUB — "COLD," "THE SHOWER," AND "TOO LATE."

The subjects of these three competitive studies are sufficiently apparent. As examples of artistic composition and relative arrangement they are complete. The colouring of the originals, necessarily wanting in our monochrome reproductions, greatly increases their charm. The late H. W. Lonsdale excelled by his rapid handling of a problem, and his knowledge of architectural detail is evident throughout. We published some similar "time sketches" from his brush on October 31, with other examples of his designs. Our series was continued in THE BUILDING NEWS for November 7, 14, and 28, also on December 19 last year, as well as January 5, 1920.

ST. MICHAEL'S CHURCH, BOURNE-MOUTH, WAR MEMORIAL CHAPEL.

The War Memorial now being erected at this church has been designed by Sir T. G. Jackson, Bart., R.A., and consists of the conversion of the South Chancel Aisle into a chapel, by removing the lean-to roof, taking down the upper part of the walls, and rebuilding with an eastern gable and a span with a coved and boarded ceiling, and new windows to east and south. On the pier between the two south windows is a niche which will contain a bronze figure of FORTITUDO by Sir George Frampton, R.A. Tablets below will contain the names of the fallen who are commemorated. The floor will be of black and white marble, and the arch into the chancel will be filled with a screen of wrought iron. The latter is made by Messrs. Hill and Smith, of Brierley Hill, as well as the altar rail, both from the architect's designs. The contractors are Messrs. A. Estcourt and Son, of Gloucester. Our illustration is reproduced from the architect's drawing shown at the Royal Academy War Memorial Exhibition.

STATUARY MARBLE CARTOUCHE, SPRINGFIELD, NEAR CHELMSFORD.

This memorial was recently erected in the south wall of the nave in the pretty little Essex parish church of Springfield. The monument is about five feet high, and the warm green marble verge, forming a setting for the pure white marble, has fine markings well in scale with the boldly handled scrolls and foliations. This sur-

round, is dull polished, and is planted on the old masonry of the building, which represents several periods and styles. The badge of the Flying Corps decorates the head piece, and the moulding of the pediment is also delicately carved. The coat of arms of Charterhouse School is emblazoned below, and the cross set between palm branches is gilt. The work was executed by Messrs. Farmer and Brindley from the clay model made from the full-size cartoon drawn by the architect, Mr. Maurice B. Adams, F.R.I.B.A.

HOUSE AT GERRARD'S CROSS, BUCKS.

This sheet of working drawings needs little description. The angle-set entrance faces due south, and the principal rooms have the maximum amount of sunshine. The dining-room bay insures the early morning eastern rays, and the drawing-room is free from the heat of the sunsets at midsummer. Four bedrooms face north-east. The offices are set to the northern side of the building, where the houseyard is situated to the rear of the garage. Mr. Edgar Ranger, of Gerrard's Cross, is the architect who designed the house for Mr. Robert Dredge. The site is in a cherry orchard. The exterior walls are on the cavity system, to ensure warmth and dryness; central heating and hot-water service to bathroom, lavatory, and bedrooms, from a central boiler room under hall, thus doing away with kitchen range, cooking being done by gas and electric stoves. Hall panelled with old oak panelling, recently unearthed from a Hertfordshire farmhouse, approximately 250 years old.

"HAMPTON COURT," LYNN REGIS, NORFOLK.

This comfortable old house, with its timber-framed windows, stands on part of the site of a Benedictine Priory at King's Lynn. The ancient monastic arch is still preserved. We are not told the origin of the name of "Hampton Court," and there does not seem to be much information available about the building. The pen-and-ink sketch reproduced to-day is the work of Mr. R. Scott Cockrill, whose similar drawing of the "Greenland Fishery" from the same town was illustrated last week. Although these historic examples differ in date and style, they make an excellent pair of typical domestic work not previously published among more familiar specimens of the picturesque remains for which the Eastern Counties are so distinguished.

OBITUARY.

We regret to record the death, on February 5, at Moseley, of Mr. Ewen Harper, F.R.I.B.A., one of the most prominent Birmingham architects, after an illness of several weeks, following a seizure. Mr. Harper was born in 1853, and articulated to the firm of David Smith and Sons, architects, then in Bennett's Hill. He was a Queen's medallist at nineteen years of age, and three years later started to practise on his own account. He was a Fellow of the Royal Institute of British Architects. Mr. Harper was a prominent member of the Wesleyan Connexion in the Midlands, and architect to a large number of Wesleyan Trusts in and around Birmingham. Many of the large buildings of the city were of his designing, most notable being the Central Hall in Corporation Street. Other public buildings for which his firm were responsible are the Friends' Hall and Institute, Moseley Road; the Alms Houses, Bournville; the Wesleyan and General Assurance Offices, Steelhouse Lane; the Electric Power Station, Summer Lane; the Y.M.C.A. Buildings, Dale End; and the Phoenix Buildings, Colmore Row. Mr. Harper married a daughter of Mr. David Barr, who predeceased him.

COMPETITIONS.

SHEFFIELD.—Competitive designs are to be invited for the erection at Sheffield of a public hall as a war memorial at an estimated cost of £200,000. The committee have appointed Sir Aston Webb, P.R.A., and Mr. F. E. P. Edwards as joint assessors. The authors of designs placed second, third, and fourth in the accepted list of merit are to be paid premiums of £250, £150, and £100 respectively, and their designs returned to them. The building is to accommodate 4,000 people in two halls, the larger hall to hold 3,000 and the platform an additional 500.

TRURO.—At a meeting of the Education Sub-Committee of the Cornwall County Council, held at Truro, the report of the Assessor appointed by the President of the Royal Institute of British Architects, Mr. H. P. Burko Downing, F.R.I.B.A., of 12, Little College Street, Westminster Abbey, upon the seven designs submitted by architects practising in Cornwall in the competition for the erection of a secondary school for girls at Truro, was received. The Assessor's award, which assigned the first place to No. 6 in the competition, was unanimously adopted, and the envelopes containing the names of the architects being thereupon opened, No. 6 proved to be Messrs. Cowell and Drewitt, of Penzance. Messrs. Cowell and Drewitt were accordingly appointed to carry out the work.

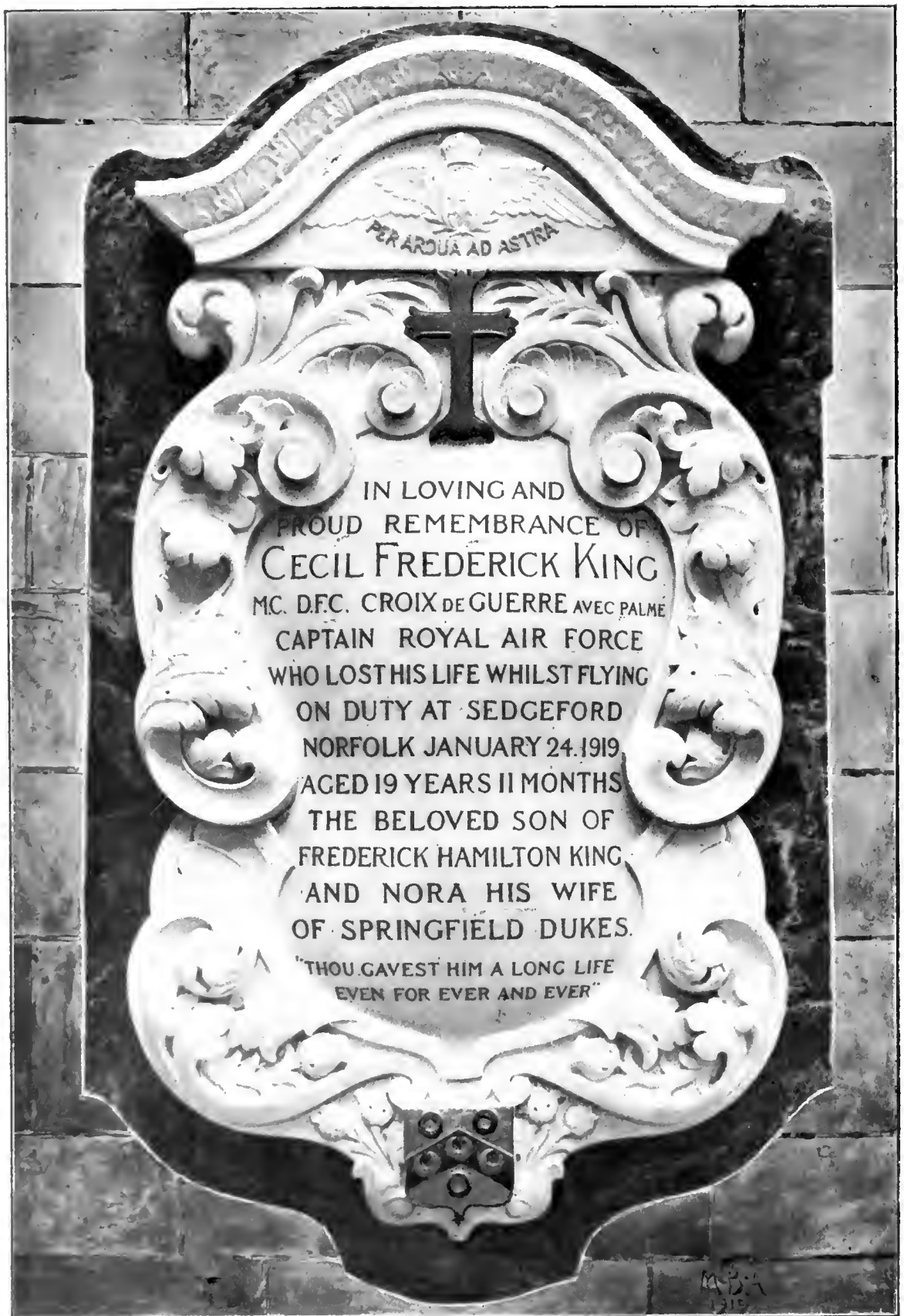
Upon the competition generally the Assessor reported as follows:—"I have carefully compared all the designs submitted, and I award the first place to the design numbered 6. The drawings present an extremely well-thought-out scheme. The main building is well situated on the site, the entrances and exits are well placed, and the plan solves the problem of arrangement of the class-rooms and hall in a very workable manner, and one most helpful to good school administration. The scheme is an economical one—corridors are short, and there is no wasted space; the buildings are well lighted and ventilated; the drainage is efficient, and the arrangement on the site secures to the full all advantages of aspect. The design is simple and expressive, very happy in its suitability to the character and purpose of the building. I have checked the cubing of the building as given by the author of this design, and it is reliable. This design is most economical in plan and treatment, and the author estimates the cost at £25,003 6s. The estimate is fairly made, but must, I think, be regarded as sanguine. I am of opinion, in view of the general increase of wages within the last week or so, that the whole of the work will not be carried out with such satisfactory finishings, although of the simplest kind, as are properly required for buildings of this character for a less sum than £30,000. I place second the design numbered 5. The elevation is good, but the plan is considerably less economical in cube than No. 6. The author estimates the cost at £26,720 8s." The designs placed second and third by the Assessor proved to be those submitted by Messrs. Cowell and Drewitt, Penzance.

Mr. E. I. Randall Vining, quantity surveyor, of 74, Great Tower Street, London, E.C., has removed his offices to 97, Queen Street, Exeter.

For 30 years at the Woburn Abbey estate office, Mr. Thos. Wilson, who served under three Dukes of Bedford, has relinquished the post of chief accountant.

Swan and Edgar's business in Piccadilly Circus is to be acquired by Harrods. If the bargain is completed Harrods are to pull down the present building. The window frontage is 796 feet, the largest window frontage of the kind in London.

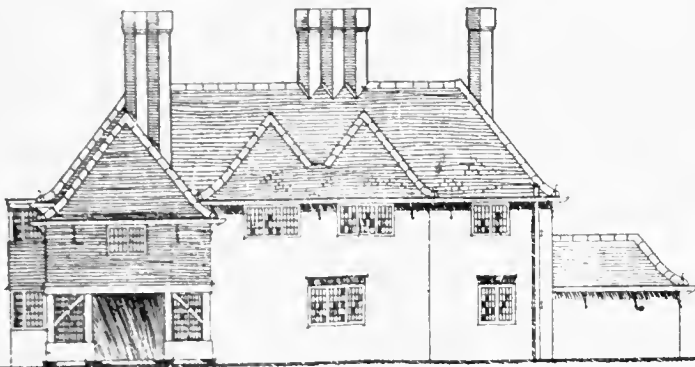
Tenders have been provisionally accepted for 194 houses of various types at Llandudno Junction of £198,500—Mr. George Salt, builder, etc., Deganwy, and for 40 houses, Type B, at Gylfin, of £40,052 11s. 4d.—Messrs. Griffiths and Jones, builders, Conway. The works in connection with the roads, sewers, etc., will shortly be completed, and it is hoped to have a number of the houses ready for occupation early in the summer months. Mr. J. Arfon Jones, of Roby House Chambers, Llandudno, is responsible for the architectural work in connection with these schemes.



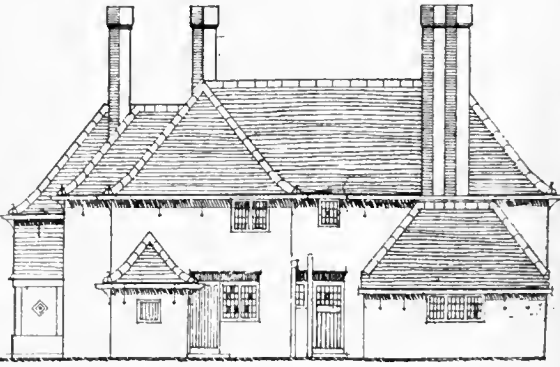
STATUARY MARBLE CARTOUCHE, SPRINGFIELD, ESSEX.
Mr. MAURICE B. ADAMS, F.R.I.B.A., Architect.

HOUSE AT CERRARDS CROSS FOR ROBERT DREDGE ESQ.^{RE}

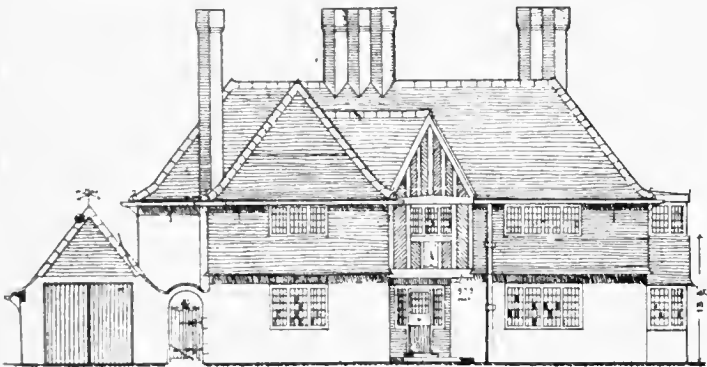
SHEET I
WORKING DRAWINGS



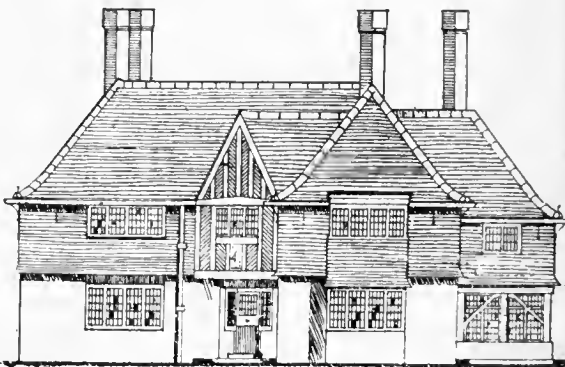
N.E. BACK



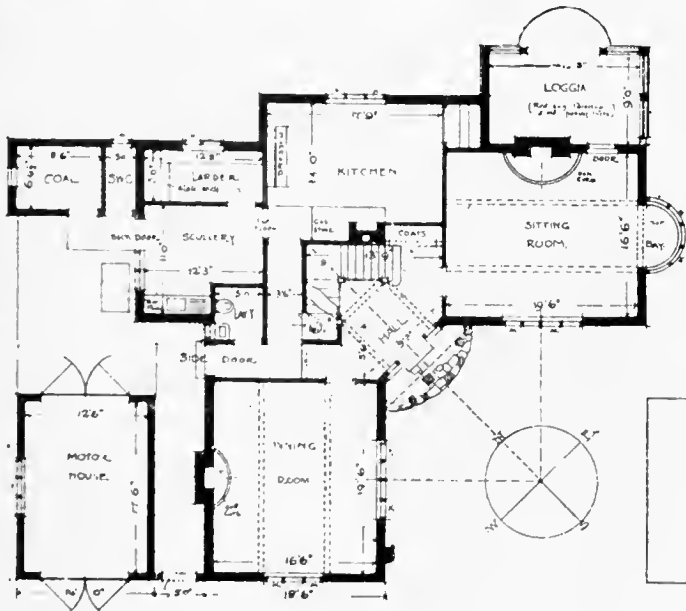
N.W. SIDE.



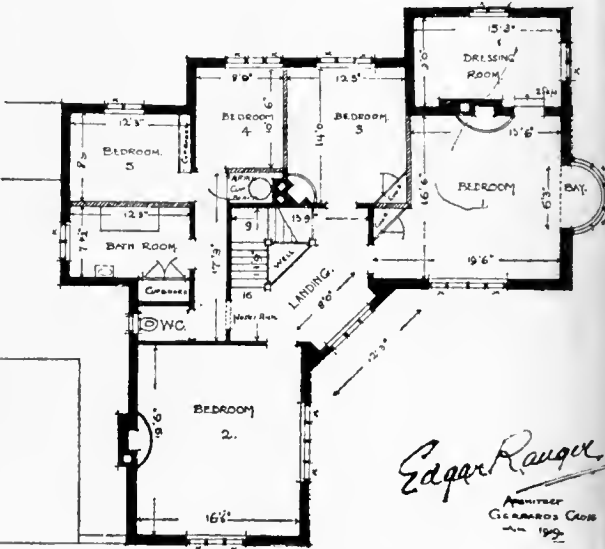
S.W. FRONT



S.E. SIDE.

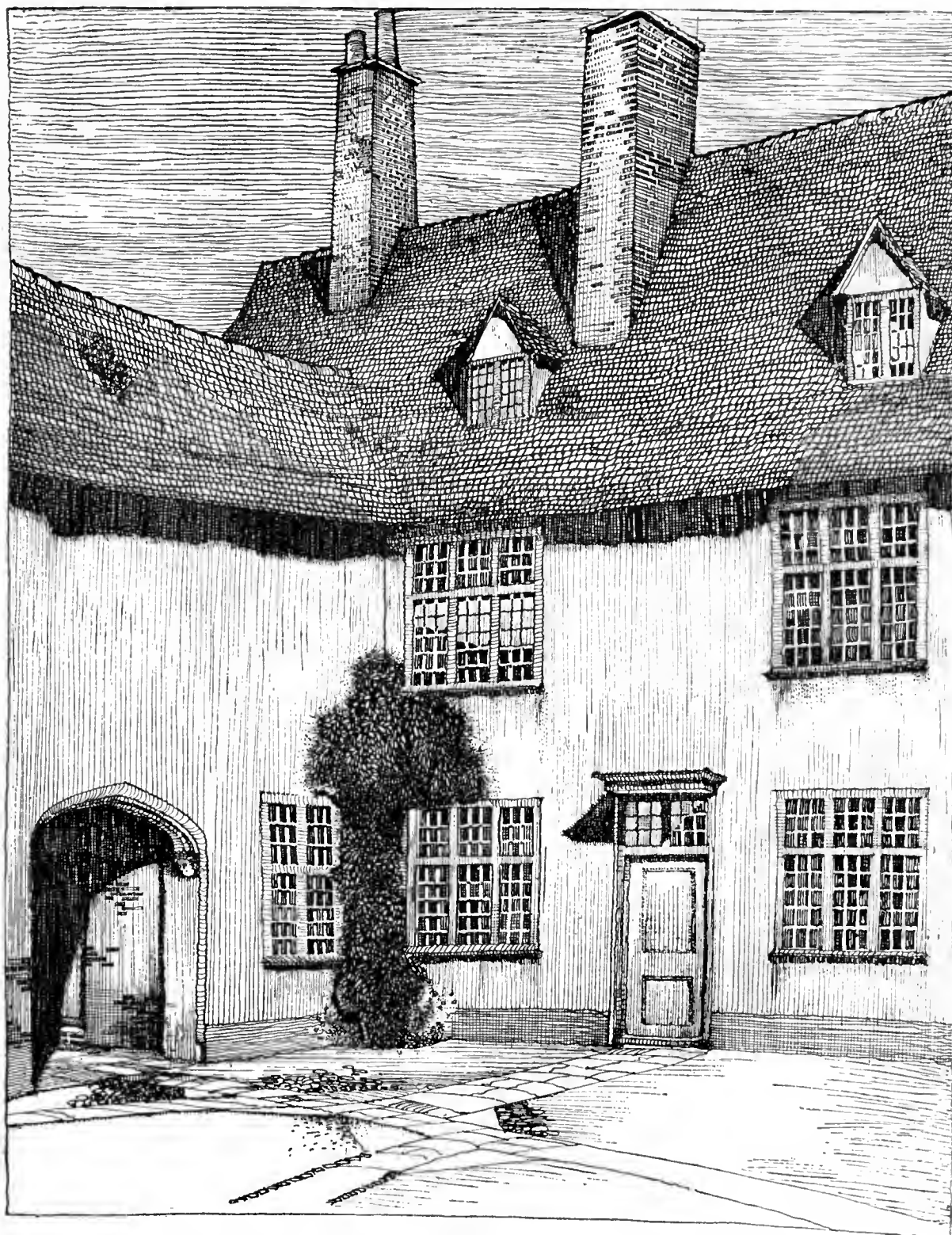


GROUND FLOOR

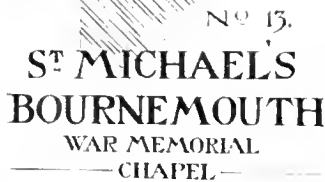


FIRST FLOOR

Edgar Ranger
ARCHITECT
GERRARD'S CROSS
1919



HAMPTON COURT, LYNN REGIS, NORFOLK.
Sketch by Mr. R. SCOTT COCKRILL.



WAR MEMORIAL CHAPEL, ST. MICHAEL'S CHURCH, BOURNEMOUTH.
Sir T. G. JACKSON, Bart., R.A., Architect. Figure by Sir G. FRAMPTON, P.A.

123-6

THE BUILDING NEWS, FEBRUARY 13, 1920.

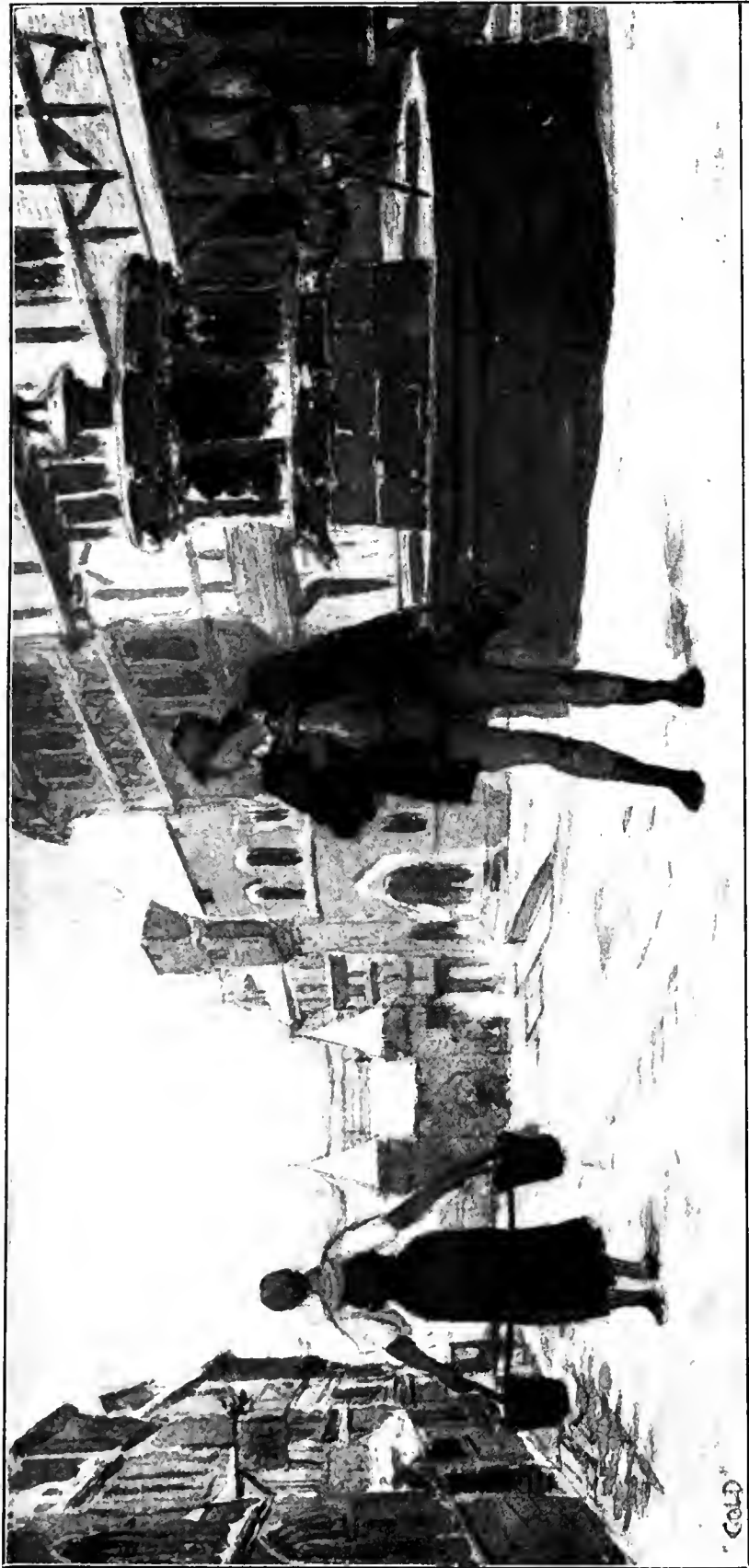




FIGURE TIME SKETCHES AT THE LANGHAM : "COLD," "THE SHOWER," AND "TOO LATE."

By the late H. W. LONSDALE (1846-1919).



MANCHESTER AND HOUSING.

A lively meeting of the Manchester City Council on February 5 discussed at some length the proposals of its Housing Committee.

Opposition arose on three proposals—the appointment of a housing director whose duty it would be to supervise the housing schemes, and act as co-ordinator between different departments and contractors; the exempting of the committee from a standing order requiring that all tenders and purchases, where the gross amount exceeded £100, should be obtained by competition publicly invited in one or more Manchester newspapers; and allowing the committee to accept tenders without first securing the endorsement of the Council. The second proposal was intended to enable purchases of material in connection with the "direct labour" scheme to be made quickly, as the Council might otherwise lose heavily on a rising market.

THE APPOINTMENT OF A HOUSING DIRECTOR.

Councillor Swales failed to see the need for a housing director. They already had a City Architect who had supervised the preparation of all the plans, and who was, so far as Councillor Swales knew, quite able to see the job through to a finish. He wondered what work would be left for the City Architect's department to do if an appointment of this kind was made.

Alderman Cook saw no reason for the appointment, unless it was that the Housing Committee required a schoolmaster to teach them their duties.

Councillor Pearce said it was a pity that the City Architect (Mr. Price) could not be present to voice his feelings. Mr. Price was very sore that the appointment of a housing director should have been suggested, as he himself had time to devote to the work.

Alderman Abbott was not prepared to vote for this badly expressed proposal, which ought, he said, to have come forward as a detailed report. It was the method of bringing the matter before the Council that he objected to, and he did not like the hurry with which this newly-appointed committee was rushing into the creation of a new department. They were not going to build palaces, a new Florence, Venice, or Rome, but commodious, healthy homes for "ordinary" people to live in.

The case for the appointment of a housing director was put by Councillor Westcott, deputy chairman of the Housing Committee, who pointed out that Mr. Price was delighted with the proposed arrangement; by Councillor Walker, who brought the matter into truer perspective by comparing the director's salary with the £20,000,000 which Manchester will eventually expend on working-class dwellings, and asserting that a good man would save the amount of his salary for the Corporation every month; and by Councillors Swarbrick and Coppock. The appointment was ultimately agreed to by a majority.

A FREE HAND FOR THE HOUSING COMMITTEE.

When opposition developed against the other recommendations of the Committee, Councillor Hart begged the Council to let the Committee "get on with the job," and Councillor Westcott appealed for backing. It was necessary, he said, that they should be able to dispense with much of the usual routine in transacting business of such urgency. Another member wanted less talk and more houses.

Alderman Smethurst thought a very important principle was at stake, and he did not see why a Committee that had yet to prove its worth should be given carte blanche.

He was supported by Alderman Abbott.

The Committee's recommendations were endorsed.

Councillor Swales, Deputy Chairman of the Finance Committee, drew attention to the extra sum required for the Corporation's wages bill as a result of the reduction in working hours and the granting of an extra bonus to manual workers in non-trading departments. It was equal to a charge on the city rates of 1s. 1d. in the £. He urged the exercise of the utmost economy in every department. Referring to the housing schemes already adopted, Councillor Swales said that supposing in 1927 the rent of the houses was

calculated on two-thirds of the cost, and the value of the land was added to that, the economic rent would be £1 0s. 9d., exclusive of rates. Manchester would find a penny rate, which was approximately £19,000, and the Government would have to find £116,195. If the rents were based on half the cost of houses and land, the economic rent would be 15s. 10d., and the Government would find £783,793. If the rent was fixed at 10s. the Government's annual contribution would be £265,083.

It is intended to build 260 concrete houses on the Catterick Hall estate, at an average price per house of £975, as against an average of £900 for brick houses on the Gorton Mount estate, where altogether 491 dwellings are to be erected. The concrete houses will be built in a variety of types, ranging in size from a living-room and two bedrooms, to a living-room and parlour with four bedrooms. In each case there will be larder, coalplace, w.c., and bathroom. A number of the houses will be semi-detached, and the others in blocks of four.

The Deputy Town Clerk, reporting to the Housing Committee on the negotiations with the Manchester, Salford, and District Building Trades Employers' Association, says, "it is probable that arrangements will be made whereby the Association will undertake that its members will build a certain number of houses at a fixed price per house. The Association will undertake to allocate to particular persons or firms, members of the Association, contracts in respect of the erection of specific houses, and thereupon a contract would be entered into between the Corporation and the person or firm for the erection of such houses. This arrangement may also be made with firms outside the membership of the Association."

LEGAL INTELLIGENCE.

POSSESSION OF "OFFICIAL" DWELLING.—An important decision regarding the rights of tenancy of a public official was given by Judge Sturges, at Preston County Court, on Tuesday, when the National Society for the Prevention of Cruelty to Children sought to recover possession of rooms at 6, East View, occupied by a former inspector, John J. Lee. Evidence showed that the inspector signed an agreement that on the termination of his employment he would deliver up possession of the rooms, which are attached to the secretary's office, and which he occupied as a service tenant at a rental of 5s. weekly. The defendant submitted that he was unable to find other accommodation, and no order could be made so long as he paid the rent and observed the conditions of the tenancy. The society wanted the rooms for their new inspector. The Judge held that the inspector was the statutory tenant, and he had no power to turn him out, the society not having proved an offer of alternative accommodation. Judgment was given for the defendant.

At a convocation held at Oxford on Tuesday last the degree of D.Litt. *honoris causa* was conferred on Mr. Thomas Hardy, O.M.

The Auctioneers' and Estate Agents' Institute of the United Kingdom will hold a meeting at the Institute, 34, Russell Square, London, to-day, at 7.45 p.m. precisely, when Mr. James S. Motion (Vice-President of Council) will read a paper entitled "Licensed Property," embracing ancient regulations, licensing Acts, etc., registration of clubs, beer and spirit duties, present difficulties, assessment of licensed properties, etc. The President, Mr. W. Waite Sanderson, will occupy the chair. On Thursday, February 19, 1920, at 7 p.m., Junior Members' Meeting. Paper on "Some Probable Problems at the Coming Quinquennial Valuation," by Mr. E. Woolf, Associate. On Friday, March 12, 1920, at 7.45 p.m., paper on "Professional Education," by Sir William Wells, Past-President and Member of the Council, and President of College of Estate Management. Friday, April 9, 1920, at 7.45 p.m., paper on "Village Reconstruction," by Sir H. Trustram Eve, K.B.E., Fellow. Thursday, May 13, 1920, at 3 p.m., annual general meeting of the members. Members are asked to make a note of the above meetings, all of which will be held at the Institute, 34, Russell Square, London, W.C.1.

PROFESSIONAL AND TRADE SOCIETIES.

SOCIETY OF ANTIQUARIES OF SCOTLAND.—At the monthly meeting of the Society of Antiquaries of Scotland last Monday night, Mr. W. Douglas Simpson, M.A., F.S.A. Scot., gave an account of "Recent Excavations at Kildrummy Castle." The castle, he said, was founded in the thirteenth century, and was one of the finest examples of a great mediæval fortress in Scotland. It bore a strong resemblance to Bothwell Castle, and, like it, had many points in common with the colossal Château de Coucy destroyed by the Germans in the recent war. Kildrummy played an important part during the War of Independence, and it was to this stronghold that Bruce sent his queen for safety after his defeat at Methven. Occasionally visited by different Kings of Scotland, and undergoing many a siege during Stuart times, the castle was burnt out by the Highlanders after the Battle of Killiecrankie in 1689, and though part of it was inhabitable till the Rising of 1715, after that date it was used as a convenient quarry for building material for the greater part of upper Donside. The remains consist of six strong round towers connected by a high massive wall of enceinte. In the courtyard, so enclosed, were domestic and other buildings, and a chapel of unusual size. The donjon, known as the Snow Tower, was of great strength, having five vaulted storeys with galleries in the wall, but it is now a ruin. One of the other towers, however, still maintains a height of over 50 ft. During the autumn of last year the excavation of the grass-covered heaps of fallen material at the gate-house was undertaken, the foundations of the towers on the west and east sides being found intact to a height of two and a-half feet and eight feet above the base course. Many other interesting details of building were laid bare. In addition, the great well in the Snow Tower, hewn out of the solid rock, was cleared out to a depth of some fifteen feet, probably only a fraction of its depth; and two garderobe drains beside the Snow Tower and the chapel were uncovered. Relics found were few and of little importance.

SCOTTISH ECCLESIOLOGICAL SOCIETY.—At last Saturday's meeting in Edinburgh Professor Cooper read a paper forwarded by Mr. W. W. Watts, F.S.A., of the Victoria and Albert Museum, South Kensington, on "The Episcopical Ring," in which he traced his subject from the earliest times. He stated that it was impossible to say when the ring was first adopted. The rings worn by Bishops appeared originally to have no special meaning. It was the custom to wear several, and on any fingers. At the beginning of the seventh century, however, the wearing of the ring had been established as a sign of office, and after this there were frequent references to the formulae upon conferring them. Among other symbolical meanings, the ring encircling the finger signified the completeness of the Faith. When a Bishop was for any reason deposed, it was dragged ignominiously from his finger. The ring also signified the perfection gifts from the Holy Spirit. Lantern slides were exhibited showing a large number of rings worn by Bishops from mediæval times. In concluding, Professor Cooper alluded to the fisherman's ring of red cornelian, showing men in a boat drawing a net, which he had seen on the finger of Pope Pius IX. The Rev. William Burnett, parish minister of Restalrig, then contributed "A Further Note on S. Triduna of Restalrig." After noticing the interesting discoveries which had been made consequent on the restoration of the ancient well and chapel in the churchyard there, he recounted the connection of the Saint with Rescobie, Kintradwell, and Papa Westray, noting that dedications to her were usually, if not invariably, found beside water—sea, loch, stream, and well—and that her cult seemed to be peculiar to Scotland, and particularly to the Northern and Eastern parts. According to the Legend of S. Regulus, she landed at Kilerghmont in the train of that Saint. The paper closed with consideration of the question whether her cultes contained a survival of well-worship and the problem of the extent to which the reputation of the Saint was connected with Norse mythology.

Our Office Table.

The Architects' and Surveyors' Assistants' Professional Union is celebrating its first anniversary on Thursday, March 4. As a result of the Union's first year's work the Architects' Assistants' Welfare Committee is re-established and re-constituted, and a meeting is called for February 17, when representatives of the Royal Institute of British Architects, the Surveyors' Institution, the Society of Architects, the Quantity Surveyors' Association, and the Architectural Association will meet the honorary secretary and Messrs. Evans, Duncan, Farmer, Strachan, Stone, and Hannam of the Union. Mr. F. R. Yerbury is the secretary of the committee. An important matter which the Union has recently had under consideration is the plight of the student in the smaller provincial town.

Dealing with luxury imports, Mr. Walter Leaf, Chairman of the London County and Westminster and Parr's Bank, said at the meeting last week: "Have we done our best to reduce our importations of articles of mere luxury? Take one heading which we can fix upon with confidence as representing luxury and nothing else—foreign wines and spirits. Observe that I am not saying anything about the use of alcohol as such. I am not presuming to lay a hand on the sacred shrines of beer and whisky. The main articles to which I am referring are foreign brandy, rum, port, and champagne. It is to my mind a scandal that, when everyone should be earnestly doing his best to put the national balance-sheet straight, we should during 1919 have imported no less than £26,695,000 of foreign wines and spirits. It is an increase over 1918 of sixteen and a-half millions—all a dead loss. It would not be an over-estimate, I think, to say that of the gap of 150 millions or so which last year represented our addition to foreign indebtedness, at least one-third—perhaps a half—might have been saved if we had been content to live in comfort and eschew mere vulgar ostentation."

A colossal increase in the cost of school-building was announced by Sir Henry Hibbert, presenting the education budget at the last meeting of the Lancashire County Council. In pre-war days the cost was about £40 to £50 per scholar, whereas now it was £145 to £150. He viewed this with alarm, and thought it would be necessary to suspend building operations. The price was simply colossal, and if the policy of building schools was carried on to any very large extent they would undoubtedly lay the foundation for a very large debt.

In a lecture on "Old Pewter: its Uses and Characteristics," which Mr. Charles Port, F.S.A., gave to the London and Middlesex Archaeological Society at Bishopsgate Institute last week, he explained that the makers' marks enabled us to tell with direct certainty whether a piece of pewter was English or Continental, and give an approximate idea of the date. There were 1,200 to 1,300 marks preserved on the touch-plates at the Pewterers' Hall, but he regretted that there was no register by which they could all be identified. The Hall marks were an imitation of the silver marks, and probably gave rise to the erroneous idea that pewter contained silver. On the subject of potato-rings, Mr. Port ran counter to popular opinion. He did not think, he said, they had any connection with potatoes. They were supposed to be made in the latter half of the eighteenth century, when English furniture was at its best, and when for dessert, if not for dinner, the table was bare. His own view was that the so-called potato-ring was used to protect the fine mahogany from the punchbowl.

A draft is issued of the temporary regulations for scholarships and other awards in art in 1919-20 proposed to be made by the Board of Education under the recent Education Act. Under these regulations the following awards, tenable at the Royal College of Art, are to be made annually to students who have not previously studied at the college:—Ten Royal exhibitions, six national scholarships, and not fewer than fifteen free

studentships. If there are candidates of sufficient merit, twenty-four local scholarships, tenable at schools of art recognised by the Board, are awarded annually. The regulations for awards in art were last issued by the Board in 1913, and it was then stated that it was intended to formulate a completely revised scheme. It is announced that the question of scholarships is now under investigation. The maintenance allowances may for the present be augmented, where the Board see fit, by 50 per cent. of the sum payable before the war.

Readers back again to work, whose instruments are out of order or otherwise lacking, will do well to send to C. Baker, of 244, High Holborn, W.C., for his January list of secondhand scientific instruments of all sorts and at all prices. It includes in Section 2 a tempting long list of surveying and drawing instruments, embracing every need of the architect, engineer, and draughtsman, at prices as tempting as the good condition of every piece of apparatus is assured, every article having gone through the firm's workshops, issuing therefrom in complete working order, and listed at prices far below those quoted when new.

Mr. A. F. Major read a paper on "London, Surrey, and the Anglo-Saxon Conquest" before the Viking Society, of which he is vice-president, at the University of London on Saturday. There are no written records of this invasion beyond the information that the Britons fled to London after their defeat at Crayford in 457. The lecturer, however, was able to deduce from archaeological and other evidence a theory of how the Saxons proceeded along the Thames valley and formed settlements in Surrey, these being indicated by the terminations of place-names, the "tons," as, for instance, Kensington, being strategic points, and the "steads" and "hams" suggesting farms and villages. His view was strongly supported by the location of Saxon graves and earthworks. An interesting question was whether London was stormed, but the capital was protected by forests and marshes, being only approachable on the south over low-lying ground washed by tides, and he held that the Saxons passed round it and made terms with the inhabitants, with whom they already had intimate trade relations.

Under the Housing Act which was passed at the end of last session, local authorities are given powers for prohibiting building operations which interfere with the provision of dwelling accommodation, but any person aggrieved by an order of the local authority may appeal to a tribunal appointed by the Minister of Health. The chairman of this tribunal will be Mr. E. B. Charles, C.B., K.C., and the following gentlemen have accepted Dr. Addison's invitation to serve as members:—Sir J. S. Harwood-Banner, M.P.; Sir James Storrs, J.P., F.I.O.B., chairman of the Industrial Council for the Building Industry; Councillor R. Wilson, J.P., chairman of the Resettlement Committee of the Industrial Council; and Sir John Wormald, K.B.E. Mr. Storrs and Councillor Wilson were nominated by the Industrial Council for the Building Industry, at Dr. Addison's request, as representatives of employers and employees respectively. The tribunal will sit at the offices of the Ministry of Health, and meetings will be held in the afternoons after 4 p.m. Communications should be addressed to the Clerk to the Appeal Tribunal (Regulation of Building), Ministry of Health, Whitehall, S.W.1. The Ministry of Health point out that before entering into contracts, or beginning to build, promoters of new construction should communicate with their local authority.

The Board of Trade have appointed a Committee, under the chairmanship of Sir Thomas Bell, K.B.E., to advise what conditions should be complied with in order to prevent danger of fire, including fire resulting from collision in the case of passenger ships burning oil fuel, and what special precautions, if any, are necessary in the case of oil fuel with a flash point as low as 150° F. The secretary to the Committee is Mr. G. C. Agar, of the Board of Trade, and any communication with regard to the work of the Committee

should be addressed to him at the Board of Trade, Great George Street, Westminster, S.W.1.

A remarkable attack on Lord Bute was made at a meeting of the Cardiff City Council on Tuesday, arising out of a scheme for widening Duke Street, a narrow thoroughfare abutting on the walls of Cardiff Castle. Mr. C. F. Sanders declared that the Marquis of Bute and his castle were stifling and smothering the life of the city. The castle and its walls stood in the way of the best development of Cardiff. There were hundreds of acres of unused land in the centre of the city, which brought in very little to the rates. The improvement scheme now suggested would only reveal more of the castle wall, which, gaol-like, now fronted the North Road. Mr. Sanders' amendment, deferring the improvement scheme, was carried by 8 votes to 4.

Room XXVI., at the National Gallery, till recently hung with a selection of English portraits lent by the National Portrait Gallery, was re-opened yesterday to show a number of portraits and portrait groups chosen from the Gallery collections. The north walls are given to the Northern Continental Schools, and the south to the Italian Schools; and the room affords a rough opportunity of comparing at close quarters the methods and periods of some three centuries of European portraiture. Holbein's "Ambassadors" is shown between the two large "Family Groups" of Franz Hals and of Michael Sweert (once assigned to Vermeer), the groups being separated by Van der Helst's Rembrandt-like "Young Lady" and Rembrandt's "Portrait of Himself" as a young man. On the centre of the Italian wall is the Venetian full-length portrait of Andrea Tron, ascribed by some to Pietro Longhi, but hardly in the known manner of either Pietro or his son. Among the smaller pictures are Lotto's "Protonotary Giuliano," Moroni's "Lawyer," Rembrandt's "Françoise van Wasserhoven" (?), Van Dyck's "Marchese Cattaneo," and Van Oost's profile of a boy with a muff.

CHIPS.

The late Mr. Thomas Daniel Brook, of Colchester, auctioneer and surveyor, left estate valued at £8,664.

The following gentlemen have been reinstated by the Council members of the Royal Institute of British Architects:—Middleton, George Alexander Thomas, as Associate; Wilson, Alexander Brown, as Associate.

A decision to apply to Parliament this Session for powers to own buses and run auxiliary omnibus services to link up "dead ends" of tramways was reached by the L.C.C. on Tuesday without discussion. The vote was unanimous.

Every reader will be glad to hear that Mr. Ernest Newton, R.A., has come safely through a very serious operation and is progressing satisfactorily. He hopes to be able to move to the country at an early date, and we trust ere long will return perfectly recuperated.

A meeting will be held on Tuesday, February 17, 1920, of the Society for the Promotion of Roman Studies, at the Society of Antiquaries, Burlington House, Piccadilly, W.1, when a paper will be read on "The History of Rome in Teaching and Research" by Norman H. Baynes, M.A. The chair will be taken at 4.30 o'clock. Each member may introduce a friend.

During last Friday's conference in connection with the series arranged by the Royal Institute of British Architects at the Ideal Home Exhibition at Olympia, a delegate from one of the London boroughs said the experiment of Manchester in the formation of guilds of workers was being watched with considerable interest, and it was quite likely that similar guilds would be formed in London.

The amount subscribed so far to the Society of Architects' Victor Scholarship Fund's £120, and if all members who have not yet joined in the memorial will do so at an early date the Society's object will be achieved. The individual donations received have ranged from five shillings to ten guineas, but the measure of the members' gratitude for victory, as a body, will be shown by the number of subscribers rather than by the individual value of their gifts.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

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OUR ILLUSTRATIONS.

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Strand, W.C.2

neux, killed at Jutland Bank. Mr. W. D. Caroe, M.A.(Cantab), F.S.A., F.R.I.B.A., Architect.

War Memorial Cross, St. Barnabas Church, Tunbridge Wells, Sussex. Mr. P. M. Andrews, A.R.I.B.A., Architect.

Working Drawings, Godstone Housing Scheme, Beadles Lane, Oxted, Surrey. Plans, sections, and elevations. Mr. Arthur Keen, F.R.I.B.A., Architect.

Currente Calamo.

Mr. Lloyd George made his usual kind of a speech to the representatives of local authorities who waited on him last Saturday. It must be made clear to the people of this country that if there was a failure this was not due to the Government or the municipalities, but the responsibility was in the people who denied labour. But before they could do that they must show that they had all done their best, and that the only thing needed was a disposition on the part of Labour to relax rules and regulations which interfered with the utilisation of the whole strength of the nation to solve the problem. The difficulties of the central Government were obvious. It had had to borrow heavily for the purpose of running the war. An appeal should be made to local patriotism for the purpose of solving this problem, and the Government asked the municipalities simultaneously to initiate a campaign in their cities and towns for the purpose of raising funds for solving the housing problem in their own areas. He believed that an appeal of that kind would meet with great success, especially if they could make it quite clear how much depended upon it. He then left them to discuss matters, with Mr. Austin Chamberlain in the chair, and Sir David Brooks, on behalf of Birmingham, Sir Harwood-Banner, M.P., Sir Howell Davies, M.P., the City Treasurer of Glasgow, and other speakers went at length upon the difficulty of raising adequate finance for housing in the areas concerned, largely because the action of the Government in issuing Exchequer bonds at 5½ per cent. made it impossible for them to borrow at that rate or less, while the effect of paying that rate or more in respect of local housing bonds would inevitably be to disturb their existing short term borrowings and to compel them to pay a higher rate of interest on all local loans. They, therefore, urged the Government to issue a national housing loan, and to guarantee the local authorities all the finance necessary to provide adequate housing. Mr. Chamberlain, in reply, said that if at the moment he was asked to raise fresh money for housing, and was to come on the market for sums such as the £1,000,000,000 which had been suggested, he would destroy the whole work that he had endeavoured to

achieve since he had been Chancellor of the Exchequer. The Government had taken upon itself a heavy liability in financing the housing schemes of the smaller authorities. If it were to assume the responsibility for the larger authorities as well, it would be impossible to obtain the sums required, whatever rate of interest was offered. Unless local authorities co-operated in obtaining the necessary funds, the housing scheme must be a failure. We very much fear it will be!

Major Lloyd Graeme, who moved to express the dissatisfaction of the House at the slow rate of progress made in house building under the Housing Acts, on Tuesday made one of the best speeches we have heard or read yet on the whole question. He was well followed by Mr. William Graham, the Labour Member for Central Edinburgh. They elicited—after a good deal of purring about his own achievements—the most damning confession of failure that has been wrung from Dr. Addison. Very emphatically he disowned the policy of subsidising low rents. Deliberately he advised local authorities in many cases to charge more rent than they intended. The Government's policy was to write off one-third of the cost and to get an economic rent on the remainder by 1927. That meant that by that time the rent for these houses will be £1 per week. A very "high-deal 'ome" for the working man, indeed, on which the ratepayers will in the meantime have been saddled with the deficiency yearly while lower rents have been accepted.

The consoling words, "alternative accommodation available for the tenant," are still in course of construction by the judges. The present position of landlord and tenant, where the Increase of Rent Acts apply and the owner wants to live in his own house, is gradually getting clearer. In the recent case of "Bazalgette v. Hampson," Mr. Justice Avory was both lucid and logical. The plaintiff, as landlady, claimed possession of her house at Kew. The defendant set up the statutes, and pleaded especially that he could not find any alternative accommodation available for himself and family in the same locality. The judge began by holding that, by her

evidence, the plaintiff had shown that she "reasonably required" her house for her own occupation, under Clause 1 (c) of the latest Act of December last. Then he turned to the defence, and pointed out that it was quite a mistake for a tenant to think that the landlord had to prove affirmatively that any alternative accommodation was in fact available. In law, the effect of the Act was that the onus of proof was upon the tenant. He could not sit down and do nothing while he waited for the landlord to find him another suitable dwelling. It was the tenant's duty to do his best to find other accommodation. As the defendant had not done this, the order giving plaintiff possession of her house would be made. But the judge suspended its execution for four months, during which the tenant could remain if he paid up all arrears and paid his future rent monthly. The crucial question of costs was left over, with liberty to each party to apply as to this and generally. But the legal point as to the onus of proof in regard to "alternative accommodation" was made painfully plain for all.

"Experience makes fools wise," runs the old proverb. Let us hope some of our own fools who believe in the possibility of getting a quart into a pint pot may realise how the failure of economic life under Soviet rule in Russia is proved beyond doubt by recent wireless messages circulated from Moscow. One of these, dated the 12th inst., announces that the Soviet authorities have decided to take strong measures for building up the economic life of the country, and that the disorganised state of transport demands united work. The message states that although the Soviet Government in the first days of its existence introduced an eight-hour working day and has not yet finally abandoned this idea, the 12-hours' working day has been introduced in different towns. The message continues: "The toiling masses must understand that it is necessary to abandon the idea of an 8-hour day in this time of disorganised and hard work. They must work for 10 and 12 hours a day, and realise that they are working for a brighter future. They must devote all their forces to work for the re-establishment of economic life." The message further states that a longer

working day had already been introduced in Knotep, Nijni Novgorod, and other towns, and will be extended throughout Russia.

LIGHT AND PRODUCTION.

The three fundamental components of a productive organisation are the man, the machine or tool, and the raw material. Labour and materials have always been available, and industrial progress is chiefly the result of improvements in the tools of production. The fact that good artificial lighting has a similar beneficial effect on production is not so generally recognised. If it were, there would soon be an end of dimly-lighted workshops, where one has sometimes almost to feel one's way between machines. Furthermore, an increase in output may be secured by a relatively small cost for lighting accessories, whereas it would cost many thousands of pounds to produce the same result by means of improved machinery.

LIGHT AS AN AID TO EFFICIENCY.

Light is just as much a tool as a turret lathe. Hand and eye are both necessary in any industrial operation, and if there is any question as to which is the more important, the benefit of the doubt must be given to the eye. The effect of good artificial lighting on production is not merely a matter of opinion; it is a fact, demonstrated by careful comparative tests in factories in which ineffective equipment has given place to lighting systems based on engineering lines. And always the result has been an increase in output of from 8 to 30 per cent.

All factories and workshops require artificial lighting during certain periods of the year, some all the year, and it may be taken as a conservative estimate that at least 20 per cent. of the total production of the country takes place under artificial illumination. Indeed, with the modern tendency in the direction of the multiple-shift system, the day may soon come when 50 per cent. of our manufactures are produced without the aid of sunlight.

PRODUCTION UNDER ARTIFICIAL LIGHT.

In the past factory lighting was considered merely as a necessary expense to be kept as low as possible, the illuminating results being a secondary consideration. The reason for this was simply that industrial managers did not realise how large a proportion of their output was produced under artificial light. Taking this proportion at 20 per cent., and considering that the average daily period of artificial illumination is two hours, or one-fourth of the ordinary working day, we find that a quarter of the workman's time is occupied in producing one-fifth of his output. In other words, his pace slackens as daylight fails, and under artificial light he works 33½ per cent. less quickly than by daylight. It is a fair inference that this falling-off in production is due to faulty lighting. Obviously, the remedy for this condition lies in the improvement of artificial lighting up to the standard of good daylight. This does not mean necessarily that we must simulate daylight in respect of colour, but simply that we must ensure that the intensity and quality of the artificial lighting are such as will permit of the comfortable effortless vision experienced during the hours of sunlight. Every straining of the eye to see some small object or intricate piece of mechanism is a tacit condemnation of the

lighting system, and, moreover, is a hindrance to efficient production.

GOOD LIGHTING APPLIANCES.

Ten years, or even five years ago, it would have been difficult, in fact almost impossible, to have provided artificial lighting of daylight quality. The requisite appliances were simply not available, or at least not available in the form suitable for industrial use. To-day the situation is entirely changed. The invention in 1914 of the half-watt type of incandescent electric lamps placed at the disposal of the illuminating engineer a lighting instrument of incalculable value. Up to that time the only high-power electric unit was the arc lamp, which, owing to its complexity, its need of constant attention, and the fluctuating quality of the light, was a very poor substitute for daylight. On the other hand, there was the ordinary metal-filament lamp, which became extremely popular, and, owing to its superior efficiency, completely ousted the old carbon-filament lamp. But the metal-filament lamp, although it made possible a great advance in the standard of factory lighting, was not available in a sufficiently large range of sizes to meet the requirements of daylight effectiveness.

The half-watt incandescent lamp is the ideal light source for which the world has been waiting. It is made in a number of sizes, from 60 watts up to 1,500 watts (approximately 120 to 3,000 candle-power), and for low-voltage circuits in 15 and 30-watt sizes. In all essentials it is an ordinary metal-filament lamp, burning with absolute silence and requiring no attention. It is, however, twice as economical as the metal-filament lamp. The half-watt lamp, therefore, provides a source of light with the simplicity, safety and convenience of the ordinary incandescent lamp, coupled with the big lighting possibilities of the arc lamp. In addition, it gives a brilliant white light which approximates closely to daylight. This lamp, during its five years' existence, has worked a revolution in factory lighting, and has made possible intensities of illumination which previously were not considered practicable.

But that is not all. Concurrently with the improvement in lamps, equal improvement has been made in the design of reflector equipment. Now, the reflector, whether it takes the form of a metal reflector or a glass reflecting bowl, performs, or should perform, two very useful functions. One is to screen the brilliant filament of the lamp from the eyes of the workers, and the other is to re-direct and distribute the light, so that maximum illumination is received on the working plans.

In the old days, with inefficient lamps, whether bare or fitted with ordinary shades, it was necessary to have the light near the work. This, of course, is the very antithesis of daylight. The best kind of daylight for any kind of work is that which comes through a north light or saw-tooth roof, and if we are to get the daylight effect into artificial lighting, that is the condition we must imitate. This could not be done with small units, but it can be done with the high-powered half-watt lamp.

Modern practice tends more and more in the direction of general overhead lighting by means of large units. In a large interior this system can be employed to the fullest advantage. For example, an aeroplane factory was very successfully lighted by means of 1,000 half-watt lamps in diffusing bowls suspended at a height

of 20 ft. and spaced 30 ft. apart. The total effect of the illumination was very similar to daylight, and from the productive point of view it was found that, providing the light was switched on before daylight had perceptibly failed, there was no slackening in output. Indeed, the workers hardly seemed to realise the change from daylight to artificial light.

PRODUCTIVE INTENSITY.

Another factor which has undergone considerable change as a result of the invention of the half-watt lamp and its application to industrial lighting is our conception of what constitutes a proper intensity of illumination. A few years ago an average intensity of 2 ft. candles was considered almost extravagant. Experience has shown that far higher intensities are frequently, indeed generally, desirable, and nowadays, in factories which have put their lighting on a productive basis, it has often been found advantageous to employ intensities of from 6 to 12 ft. candles. Experiments have shown that, within reasonable limits, productive efficiency increases in proportion to the intensity, and in some cases a result of doubling an illumination which appeared exceptionally good, averaging, say, about 4 ft. candles, an increase in output of from 10 to 20 per cent. has been achieved.

SOME INTERESTING TESTS.

Tests lasting for several months have been made in a number of representative factories, and during the test period accurate records of production have been kept. First the test was carried on under the old lighting, which was no worse than that in use in the majority of the factories in the country. Then modern lighting with half-watt lamps in proper reflectors was installed, and, after making allowances for changes of labour, mechanical equipment, time of year, etc., the results showed an increase in production of from 8 to 30 per cent., the amount of increase depending upon the class of manufacture concerned. The average for all the tests was 15 per cent.

In a pulley-finishing shop the output was increased from 30 to 100 per cent. for various operations, while a 12 per cent. increase was achieved in a carburettor assembly shop.

The influence of lighting on production varies with the class of work concerned. Naturally the effect is greater in the case of inspecting fine machine work and other processes requiring close vision than in foundries, sawmills, etc. Better lighting will in many cases, although not in all, call for an increased expense for electrical energy, lamps and maintenance. But even on the most lavish scale the cost of the lighting should be insignificant in comparison with the additional profit due to increased output. The best men and the best machinery are partially ineffective without the best lighting. The waste expensive labour and heavy plant investment for the sake of paltry economies in electric lighting is, to say the least, unbusinesslike.

The Mersey Docks and Harbour Board having considered the question of modernising the grain warehouses at Birkenhead, resolved that certain electric elevators and conveyances should be installed, as suggested by the engineer, at a total estimated cost of £35,000.

The committee appointed to consider the question of a national memorial to Manx soldiers and sailors who fell in the war have decided to erect on the Fairground at St. John where from time immemorial the Manx people have assembled to hear the proclamation laws, an imposing Celtic Cross.

THE BRITISH SCHOOL AT ROME EXHIBITION IN THE GRAFTON GALLERIES.

The exhibition of works submitted in the open examinations for the Rome Scholarships in Architecture, Sculpture, Decorative Art, and Engraving at the Grafton Galleries is largely enhanced in value by examples of work executed by scholars of the British School in Rome. The members of the Faculties of Art elected to act in dealing with architecture include Messrs. Sir Arthur Blomfield, R.A., Prof. Lethaby, Sir E. L. Lutyens, A.R.A., Sir R. Lorimer, A.R.S.A., Ernest Newton, R.A., The President of the R.I.B.A., John W. Simpson, and the President of the Royal Academy, Sir Aston Webb.

The judging was completed last week. Before referring to the designs chosen for the Prix de Rome final competitions, we commend the exhibits in the third gallery, representing the work after three years' consecutive study by some of the most successful students, and particularly the measured drawings shown by Mr. L. De Soissons and Mr. P. D. Hepworth of the notable specimens of Genoa Palaces, as well as a series of six big strainers, by Mr. H. C. Bradshaw elected in 1913, devoted to the restoration designs of the town of Palestrina, a fine combination of draughtsmanship and archaeological scholarship. The big façade of the Palazzo Doria-Tursi, Genoa, the joint result of measuring, plotting, and drawing, carried out by Messrs. De Soissons and Hepworth, is a creditable evidence of study, in which the former evidently did the surroundings of trees while the latter finished the elevation. Their other subjects are the noble Renaissance Church of the Immacolata, tinted in sepia with masterly reserve, the Palazzo Serra, and the Palazzo Dell Università in the same Italian city. No mediæval examples are represented showing the change in taste still prevailing. Mr. L. De Soissons is represented besides by his projects done at the Ecole des Beaux Arts during part of his tenure of the Jarvis Studentship in Paris.

The fourth gallery is chiefly occupied by architecture, and the subject set for the Prix de Rome, "Courts of Justice," has been well competed for, five out of the nine schemes chosen for exhibition being selected for the final competition to be held in Rome. The treatment adopted for the most part is too grandiose for satisfactory palatial effect, lacking often in refinement. Unfortunately, such a modest scheme as that by Mr. R. A. Duncan, who shows a dignified long, low range of simple elevation, never could stand the ghost of a chance in such a contest, because of his unsuitable lay-out, though his courts have the advantages of private approaches from the rear for the judges and law officers, not provided nearly so well in chosen designs. His carefully-drawn detail exhibits much dexterity of delineation. Mr. D. W. Thomas succeeds with perhaps the most dignified design architecturally considered. His big, excellent detail of the central portico is a factor in his favour, but his courts are far from well grouped, and the internal areas are cramped. Mr. W. Dougill runs the last-named competitor very closely as regards architectural composition, but the awkward setting-out of the ground floor fenestration in the plinth does not line out of harmony with the window voids of the general scheme of the elevation; indeed, these lower ugly openings are spaced seemingly to fit the positions of the lamps on the parapet of the river embankment. The courts are located similarly to those

in the plan prepared by Mr. Thomas. The bird's-eye submitted by Mr. A. Koerner gives a very ordinary effect to his scheme, which, though chosen for the final, has an indifferent plan. The Neo-Grec design by Mr. F. O. Laurence is adroitly drawn. His capacious central hall bisects the contrivance of the four courts, and presents a much more dignified lay-out than the other plans. Considerable space is occupied by secondary halls flanking these courts. Mr. E. R. Arthur shows the river embankments very capably, and his block of buildings is flanked by big detached columns capped by seated griffins. The inter-columniation adopted for the façade is too closely spaced, and in the general elevation drawing an increased emphasis is given to the verticality of the design by lines suggesting raised panels on the face of the shafts. In the detail these are omitted, so perhaps the effect referred to is only a trick of draughtsmanship, and if so the result is misleading. The attic over the longitudinally placed hall is not good, with its segmental headed big windows out of scale with the rest of the work.

The beautiful water-colour sketches shown by Mr. H. L. Bradshaw in this same room of architectural subjects are handled with feeling and a knowledge of colour values. It is a pity that the titles of the subjects are not given on the drawings for identification. Mr. W. A. Narbeth, chosen for the final competition, shows some fine figure drawings and landscapes; and Mr. J. Nixon, also selected, exhibits a good study of the Euston Station Entrance, his versatility being demonstrated by a choice of pasture scenes and landscapes, with trees well done. In the decorative section, Mr. A. Outlaw is put in for the final, and much skill is displayed by his drawings from the nude, posed distinctively and forcibly sketched from the life. His well-grouped compositions show little reliance on extravagant detail. His scheme for the decoration of Cobham Church is not particularly interesting, however, and the way in which that interesting building is kept scarcely suggests any likelihood of its being improved under present conditions.

In the sculpture, Mr. Gilbert Ledward, elected in 1913, takes the most prominent place in the first gallery. The low relief of his historic war frieze, executed for the Imperial War Museum, alone justifies his credit as a student of the school at Rome. The sketch design for another prize for the same body has fine monumental quality as shown by his actual size detail. The work submitted by Mr. Alexander Styles, although his subjects are comparatively few, should help his success for the Prix de Rome. His drawings of hands are specially good, and the low relief is a scholarly and artistic example of skill in arrangement.

The parishioners of Gresford, near Wrexham, have decided to accept the design of Sir Thomas Jackson for the erection of a porch on the north side of the Parish Church to serve as a war memorial.

The Housing and Town-planning Committee of the Irham Urban District Council have accepted the offer which has been made by the Building Guild Committee, representing the operatives in the building trades, to erect a thousand houses. The Guild committee is to find the labour, while the Council pays the wages bill, plus 10 per cent., to compensate for loss caused by guaranteeing a full week's work or, in the event of broken time caused by inclement weather, a full week's wages to the workmen. Out of this 10 per cent. overhead charges for plant and transport will also be met. All materials will be bought by the Council and supplied to the operatives.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A general meeting of the R.I.B.A. was held on Monday, Mr. Jno. W. Simpson (President) being in the chair.

The formal business having been transacted, Mr. Paul Waterhouse delivered an address on the Future of Architectural Education. He said that the teaching of art differed from the teaching of science, and architecture being both science and art demanded teaching of both kinds. In teaching science, facts were laid before the pupil for him to store and use for himself as facts, whereas in the teaching of an art, facts were laid before the pupil for him to digest and reproduce in his own form. Before 1882 pupillage was the only accredited test of a man's having been educated as an architect. Hard things had been said about pupillage as a means of education, and many of them had been deserved. In small offices the pupil was often kept for a year or two to menial tasks, and later promoted to responsibilities for which he was unripe; while in the very large office the pupil might find himself one of a group of scholars remote from the actual mainsprings of operation, and getting little touch with the actualities of production and procedure. But, as many present knew, the young man usually got careful training, good advice, valuable experience, and a start in life. But the Institute saw that education in architecture ought not to be left to the haphazard whim of the collector of premiums. It began by inviting candidates to a voluntary examination, and in 1882 established the obligatory examination, without passing which no aspirant was to be admitted to the Associateship. One result of this action was to initiate a race of architectural teachers; and, probably, the hardest thing that could be said about those small beginnings of forty years ago was that they had led to "cramping." This expression implied a teacher who loaded a pupil with facts, so attached that they could be successfully carried for a certain number of days and then unloaded at an examination. It was also implied that once the load was east off the intellect of its bearer bore no traces of it that would affect his mentality. But, obviously, cramming was only a question of degree. Every teacher was a crammer in the sense that he helped to ladle into the taught some things which the student would not by the mere action of his own appetite think of as mental food; if there were men who fed young minds with meat which was discharged at examinations in an undigested condition; the fault lay with examiners. There could be no excuse for holding examinations which could be passed by the mere emission of undigested facts or figures. In its charter of 1887 the Institute took power to establish the Preliminary, Intermediate and Final examinations. In so doing it laid down the framework of a structure which was in a short while to exceed all expectations, and which entailed a considerable sacrifice on the generation of architects who made the change; for an architect with an average of three pupils, each going for four years, would make from £250 to £300 a year out of pupil taking. Nowadays, thanks to the educational facilities which had been the direct result of the examinations, it was common for a young man to get himself trained at a school from the start, and to delay entry into an office till a time when he was more likely to demand a salary than to pay a premium. The Preliminary examination was no more than a test that the candidate had received an education of a standard up to that of a good secondary school, and had, besides, a knowledge of drawing. Certificates or examinations from a large number of recognised universities, colleges, and schools were accepted. The Intermediate examination brought the candidate to grips with the realities of architectural study; in this examination and in the Final the aim was to make sure that the candidate could not only answer questions, but that he had spent a reasonable period in steady work. For the Intermediate, the Institute, anxious to do all in its power to promote and encourage the

means of education, had decreed that the courses of certain schools should be accepted as substitutes for the passing of this examination; the school of the Architectural Association of London and the architectural schools of the Universities of London, Liverpool and Manchester were in this list. The Institute's hold on the qualifications of these recognised courses was secured by the verdicts of external examiners, who were for the most part members of the Board of Architectural Education.

Mr. Waterhouse continued, that although Chairman of the Board of Architectural Education, he was speaking as an individual when expressing opinions as to future developments. The whole object of the examination system, as fostered and controlled by the Institute, had been to make sure that sound education was going on in the country, and that only those who had successfully learned architecture were admitted as Associates. The Institute owed, and would continue to owe, incalculable thanks, on behalf of architecture, to the personnel of the teaching profession. That profession had been recruited almost exclusively from the men who owed their own education directly or indirectly to the examination system. It had to be remembered that learning was a much more important thing than teaching, which was nothing more, even in its noblest development, than an aid to learning. He mentioned this rather elementary fact because there was a school of thought which thought that the class of education a man received was of more importance than the class of knowledge he had obtained by learning. He said without reservation that he did not care where a man had been educated or how he had been educated as long as he knew. (Applause.) He did not object to the schoolishness of schools nor to the multiplication of architectural schools; the more the better, if they were all good. An interesting and most encouraging sign of our present condition in connection with architectural education was the growth of a strong and very divergently expressed enthusiasm on the subject of further development. From one quarter there came the suggestion that what was needed for the enlargement of educational growth was the abolition of what was called the stranglehold, but what he would prefer to call the embrace, of the R.I.B.A. It was contended by this group that the whole control of the examining system should be in the hands of the Universities, though to do them justice he did not suppose they meant to exclude from the controlling bodies a certain school of architecture which had won its way to pre-eminence before some of the said Universities were born. Some innovators insisted that examinations could only be fairly conducted by professional teachers; some maintained that a student should only be examined by his own teachers. By some it was felt that the Institute should do its utmost to prolong the period of study and, as a consequence, delay the age of entering the profession. All these contentions could be cleared of elements foreign to the real point of issue and boiled down to what might be called "reform," though he did not like the name; because it implied vice of some sort in the person or body to be reformed. "For myself," he said, "I can see no vice whatever in the prevailing system. All that it suffers from is the old familiar nursery ailment of growing pains. The education system is becoming a big boy—a very big boy by now, and what is needed is nothing more than an adjustment in order to bring the machinery of his existence into line with the facts of his new conditions. The call for a more intimate participation in the examination system, the demand for greater stimulus to higher education, the wish for a wider territorial extension of the benefits of such education can all, I think, be met by very simple devices of organisation. One clamour I hope will never be met—the voice, I mean, of those who desire that the body which started the educational improvement which superseded mere pupillage should abandon its interest in education and should hand the keys of entry to its own body over to other institutions. The Board of Education in Architecture must be strengthened, enlarged,

so as to be representative of all the national interests which concern themselves with architectural education, and made capable of securing the services of every human and national force which cares about its ends; but it must remain a body appointed or invited by the R.I.B.A., it must jealously and zealously serve the interests of the Institute in excluding unsuitable men from membership, and it must or should be the permanent national force in the control of the examination system. How is all this to be carried out? In the first place, the bonds which at present unite our Board to the teaching bodies of the country must be enlarged. This can be done without any loss of dignity by the Institute and with a great increase of prestige. Every large recognised school, 'recognised' I mean in our technical sense, should have representation on the Board. Similarly there should be on the Board such representation as we may be able to invite, and to secure all national bodies interested in our work. We should not, I think, shrink from inviting the Education Offices of England and Scotland, the Royal Academy and the older Universities to help us by the presence of their nominees. The Council here would retain the right of electing from our Institute the main body of the Board, but the effect of the enlargement in the directions indicated would be to make it national as well as professional in character."

Mr. Waterhouse added that a board of this increased size and rather changed mentality would be administrative and deliberative rather than executive, and would remit the functions of detailed control to a sub-committee largely composed of teaching members of the board. At the present moment no one knew how far the State might take interest in, and give aid to, architectural education, but it was well to keep the possibility in view. As for the Institute's relationship with the schools, he proposed to strengthen it by a more real admission of the schools to representation. The Institute had been asked to give the schools greater rein by according recognition, such as to exempt students not only from the Intermediate examination, but also from the Final. But the schools asked too much when they demanded, even under limitations, that the Institute should consider a man qualified for Associateship without its having examined him in any degree whatever. A compromise was possible. Some were hoping that the professional part of the Final examination should be enlarged into something more real than it was at present, and their idea was that no student should be considered as passed for Associateship until he had obtained two certificates—one in the artistic and technical side of his craft and the other in the professional—and that he should be allowed to pass whichever of these two departments of test his circumstances dictated as most convenient. If, therefore, any schools arrived at the stage of being worthy to obtain exemption for their students from a large part of the Final examination, it should be possible to arrange that the Institute could grant such a measure of exemption as would not abrogate its own power of saying the final word as to the candidate's fitness. The Institute must remain sole judge in regard to the professional test, but, with regard to the technical part, it might recognise as qualifying for exemption from its examination certain advanced courses and examinations of selected universities and schools, subject always to this proviso: that the Institute's examining body must in every case be judges of the standard reached in design. His own view on this particular subject was that the Institute might retain its essentially necessary hold on the design test, without insisting that the design examination should be conducted on the Institute premises. In fact, he imagined it might be possible for the pupil of a school "recognised" for the Final examination to pass the whole of his exemption test on the school or university premises, except that he would necessarily have to pass the professional examination at the Institute, and that his exemption on the technical side would not be obtainable until the Institute had passed the drawings produced by him in the design test at his university or school. At present no

school was admitted "recognition" by the Institute except after special inspection by the Board of Architectural Education, and, further, the courses and examinations on which the recognition was based were constantly under the eye of external examiners in touch with that board. It was probable that this arrangement might need be supplemented by the appointment of inspectors.

Mr. Waterhouse concluded: I have the most genuine belief in the teaching power of the excellent schools which the young universities have started, and of the still young schools which some of the older ones have established. I have also a genuine and hopeful belief in the non-university schools which are springing up and multiplying all around us. I have a great expectation of the atelier system, which is putting forth new life under the sheltering guidance of the Royal Academy, and lastly, I have an old affection and loyal admiration for the heroic Architectural Association and its unsurpassed record of educational achievement. In fact, I believe that the vigour of architectural education all over the country is one of the most healthy and brilliant things in an England which is not always brilliant and not in all its departments healthy; but I cannot be persuaded by any threats or arguments that there is any reason whatever why the Royal Institute of British Architects should release its love of or its affectionate hold upon the education system which it promoted, fostered, and still controls. (Applause.)

Sir Amhurst Selby Bigge, K.C.B., moved a vote of thanks to the lecturer, and Mr. W. R. Davies, C.B., seconded this. Both these gentlemen spoke very briefly, but the subsequent discussion was continued at great length.

Professor Beresford Pite said it would be well if they could have a summary showing the results of the examination for, say, the five years previous to 1914. This should give the total number of those who sat for the Intermediate examination—he imagined this to be about 200 a year—and state how many had come to that stage from schools, and how many not from schools. His own impression was that something less than half the architectural education up to the intermediate point was done in the schools. The rest was done somehow in the offices, if not under formal pupillage, at least under office training. As to the Final examination, he would like to know how many came up for that examination compared with the number who came up for the Intermediate, and he would like to know what was the proportion of those who passed the Final examination out of those who presented themselves. He would like to know, also, what records the Institute had of those who failed to pass, whether they came back again or were lost. As long as the Institute maintained its present position of keeping the Final examination in the hands of those architects who had not got enough business to occupy themselves, it would put a stop on the whole progress of architectural education at the Intermediate examination. In consequence of the establishment of the Intermediate examination, and the allowance of the certificates of exemption to the schools, every one of those schools had a completed course of architectural examination leading up to the Intermediate standpoint, but there was no school of architecture in the country that had got a course up to the Institute's Final. A progressive University like Liverpool or Manchester would take the Institute's Intermediate examination as a step towards its own degree in architecture. The Architectural Association had found itself in a difficulty when endeavouring to make a course for the Final examination as at present constituted. If the Institute was prepared to accept the certificate of courses towards the Final examination, those Final courses would be given in the schools, and architectural education would get its needed impetus. He would like to support in the warmest way Mr. Waterhouse's suggestion that the Final examination should be divided, so that technical courses might still be conducted in the universities and recognised schools, and he hoped the Council of the Institute would consider the very important bearing this

would have on the recognised schools. It was in the advanced studies that the help of the teacher was most needed; in the advanced studies in scientific construction and the application of building law, to say nothing of design, the help of an inspiring teacher was almost everything. The interests of architectural education lay in the pursuit of final ultimate studies rather than in the intermediate standpoint at which they had arrived so successfully. As to the subject-matter of the Final examination, he was unconvinced of the desirability of this Institute taking to itself the position of being the ultimate critic of architecture. It had to be remembered that a man's progressive years were those of student life. It was then that the mind was active, when problems dealing with, say, the planning of a city presented themselves to the mind in the most delightful form. Sympathy with the young student's point of view, appreciation of its originality and freedom were vital; but they were not to be expected from the class of men who formed the Final Examination Board of the Institute. He was not blind to the other side, the practical side of the question. It must be stated quite clearly that the architect could never be produced in school. (Hear, hear.) The real practical architect was not the product of any course of study. The architect must have contact with business, with men and with materials, or his dreams would continue dreams and never be built upon the solid earth. As to the question of whether the first or second period of two or three years each was best for office experience, the student should not be compelled to take his first group of years in the school and his second in the office. There were very great advantages in starting the man at once in contact with actual work; at present, half the students who came for the Intermediate examination came not from schools but from offices. He would like to make this contribution of experience, that the ablest students he had dealt with—those who had developed ability to the greatest extent—had commenced life in the lower grades of the architect's office; and at a later period, owing to evening study and assiduous work, had obtained scholarships for university or college courses. He attached very great value to practical acquaintance with architectural drawing as well in the earlier stage of training as at the later one. They all knew that office experience had to come in somewhere, and he asked them to remember its great value at the outset as well as later. With regard to architectural examinations, there were questions of professional practice, building etiquette and practical life, requiring knowledge which could only be acquired in an office; and an examination in such subjects would be better decided by a board of practitioners than by a board of water-tight instructors in architecture. London practitioners as a rule were absurdly ignorant of the Local Government management and by-laws, which in extraordinary variety governed building throughout the country, so that such questions as he had been alluding to could not be settled by them.

Professor Reilly said the Institute's examination had been established at a period when examinations were thoroughly believed in. At that time London University was a purely examining body, simply giving certificates; but another generation had laughed that kind of thing out of existence, and the new University of London was a great teaching body. Architecture was passing out of the examination phase. He himself had crammed for a fortnight to pass the Intermediate, and for another fortnight to pass the Final. The architectural schools had not really grown out of the Institute's examinations, they had grown out of a desire on all hands to promote a great art, and they did not start to cram up their students for the Institute's examinations as existing in those days. In was to the everlasting honour of the Architectural Association School that it went forward on its own scheme of design regardless rather of the Institute's teaching. At Liverpool they had done much the same. Since the institution

of the Board of Architectural Education things had altered, for the Board had instituted continuous problems in design which had led to a great growth in the schools. He believed the Architectural Association had 200 students, and that there were over 100 other schools in a similar condition. The danger was lest the enthusiasm of the students should be squeezed out by a rather hard iron net through which only the little fish could get. (Laughter.) He did not suggest that power should be taken away from the Institute; he wanted to bring the Institute into the schools. He would like to have on the Board of Architectural Examination as many external examiners as liked to join it. He welcomed very much the suggestion as to the future division of the final examination. They had a five years' course at Liverpool University. If at the end of that course the student was not fit to be an Associate of the Institute—that was the kind of membership that civil engineers and so on gave after three years—the teaching had better be given up.

Mr. Lewis Solomon said he had been rather hurt at some of the remarks of Mr. Pite. The Institute's examiners were the very cream of the profession and were always extremely busy. It was the busiest men who were able to give time to a thing of this sort. (Hear, hear.)

Professor Richardson said that as a member of the academic staff of the London University School of Architecture—the oldest architectural school in London excepting that of the Royal Academy—he would like to draw attention to the weakness of the existing system of training. Architecture could not be taught; it was only possible to study its elementary and underlying principles. Certificate and degree courses did not produce architects, but Associates of the R.I.B.A. (Laughter.) In his opinion, the present system did not allow a sufficiently lengthy training. The aims of the Institute should be to promote, not an academic, but an ideal atmosphere, while still retaining its position as premier examining body, with power to enlarge the educational board; it should endeavour to co-ordinate, correct, and improve the efforts of the academic centres. The architect's training should be spread over a period of fifteen years, and thence to the end of life. The immaturity of British architects lay in the direction of design.

Dr. Elliot Smith said that medicine had passed through the same phase of pupillage as architecture, but had now for many years been completely rid of that method of education.

Mr. Maurice Webb said the proposal to increase the scope of the Board of Architectural Examination met everybody's approval. The Institute might insist on any standard it liked for admission to its ranks, but the Board should insist on something higher; at any rate, it was not for the Institute to say what should be the standard for the Board to aim at. In 1847 there were no serious schools of architects in the country, now there were many; there were also a great many more architectural societies. All these in time would have their examinations and degrees.

Professor A. C. Dickie said he hoped the Board of Architectural Examinations would be enlarged in scope so that the State, universities, and big schools might come in and recognise its degrees. (Applause.)

Another speaker said Mr. Waterhouse liked the word "embrace" better than "stranglehold"; but there were embraces which squeezed the wind out of one. (Laughter.)

Mr. Alan E. Munby said he was an examiner, and was disappointed that more was not done to give a technical training. In modern building the architect took great responsibilities. The public schools ought to be got into better touch with the architectural curriculum, for they had good science facilities and only needed to be told what was needed to give the grounding for the architect's technical work.

Mr. Lionel E. Budden, referring to Mr. Waterhouse's statement, "I do not care where a man has been educated so long as he knows," said that unless the Institute as a whole could say that its members had gone

through a properly equipped course, architecture would not have the prestige it should have. (Applause.)

The Chairman said that if reform was necessary the school was not the important thing; it was only the means to the end. (Hear, hear.)

Mr. Waterhouse very briefly replied to the discussion, and the meeting ended.

SURVEY ON THE WESTERN FRONT.*

By CAPT. WILLIAM H. TAPP, M.C.†

When England was first committed to operations in France in 1914, it had been anticipated that a large supply of a comparatively small scale map would be required, and, owing to the foresight of M.I.4 at the War Office (Colonel Sir W. C. Hedley, C.B., C.M.G.) and of the Ordnance Survey (Colonel Sir C. F. Close, K.B.E.), an ample supply was in readiness, and was controlled in France by Colonel E. M. Jack, C.M.G., D.S.O., known as "Maps, G.H.Q."

These maps were reproductions of the 1:80000 Service Géographique de l'Armée Française, and as long as the war was one of movement were sufficient for the purpose, but towards the end of 1914, when the opposing armies faced one another and began to prepare a vast system of trenches from sea to sea or from sea to neutrality, that is, for a war of positions, it very quickly became apparent that an accurate map on a much larger scale would be required—for trench representation, for operations, etc. Topographical sections were formed, and were faced with a variety of interesting problems and work.

MATERIALS AVAILABLE FROM WHICH TO WORK.

1. The French National Triangulation, 1818–1855; known as "Triangulation des Ingénieurs Géographes."

It covered the whole of France. Stations consisted mostly of spires, steeples, towers, and other prominent objects. There were, however, scarcely any actual beacons, and as the greater proportion of the work was in manuscript, only a small portion having been published, and kept at the Service Géographique, Paris, only, and also owing to the fact that relative errors of as much as 1,500 occurred, it was often a matter of great difficulty to decide what actual spire or other mark actually represented the station. In many cases it was not by any means the most prominent object that had been chosen, from reasons of caution, no doubt; secondly, the Belgian triangulation of a later date, having Brussels as its origin, did not agree with the position of common points.

The origin was—

Lat. $54^{\circ}27'42.55''$ N. = $48^{\circ}50'48.862''$ N.
Long. $00^{\circ}01'06.81''$ E. = $2^{\circ}20'49.53644''$ E. of Greenwich,
or $34.60644''$ E. of Paris.
Az. $305^{\circ}33'15.00''$ = $274^{\circ}47'54.06''$
(Panthéon, Belle Assise.)

2. The Northern Chain of Triangulation, starting from the points connected with the British Ordnance Survey Triangulation, 1860, and running through Cassel and Kemmel to the Belgian frontier.

3. The French Admiralty Survey, providing a series of well-determined points roughly along the coast and 10 miles inland.

4. The Belgian Triangulation, an excellent work, but with its origin differing slightly from the French value of the same.

5. The Incomplete Triangulation, commenced in 1890, to include all secondary and tertiary stations and a new Cadastral Survey based on new points. In our area the new meridian of Paris and the Amiens parallel only had been completed from remeasured arcs and a new base. The latitude and azimuth and the base were from new work, and calculated on a different figure of the earth (Clarke's), and as a consequence it was an exceedingly difficult problem, even for a trained geodesist, to combine points thus fixed with the original triangulation points, 1818–1855. However, towards the end of the war this was successfully done, although

* Read at the Ordinary General Meeting of The Surveyors' Institution, on Monday, February 16, 1920.

† In writing this article I am indebted to M.I.4, and especially Colonel E. M. Jack, for valuable hints and various photogr. phs. also to Lieut.-Colonel Winterbottom for some hints on sound ranging, and also for the use of many interesting photographs; and to the Royal Geographical Society for the loan of blocks for illustrations.

no less than four different figures of the earth (Carte de France, Du Plessis, Clarke's, Bessel's) and five different projections (Bonne's, Lambert's, Cassini's, Admiralty Projection for the Coast Survey, Prussian Doppel Projection) were involved.

This triangulation had its stations marked by brick pedestals or chimneys, and was consequently not so open to damage from enemy artillery fire as was the old.

The enemy destroyed all the trig. points of this triangulation in his lines.

The origin was—

I.at. 54° 27' 36.18" N. = 48° 50' 46.52232"
Long. 00° 01' 06.93" E. = 2° 20' 49.57532" E. of Greenwich,
or 54.64532" E. of Paris.

Az. 305° 33' 08.56" = 274° 47' 51.97344"
(Pantheon, Belle Assise.)

WORK FOR THE SURVEYOR.

The surveyor then was faced with three main problems:—

- (1) Production of one mean and reliable triangulation;
- (2) Production of a large scale map based on this triangulation;
- (3) Production of battery boards with large scale maps thereon for the artillery, showing accurately battery position, targets, aiming points, and bearing points.

1. Under Colonel Winterbotham's direction, and under the immediate supervision of Captain McCaw, the incomplete triangulation of 1890 was worked upon, and had the armistice not intervened, the whole of France would have been covered with a reliable triangulation of fixed points, from which the western points of the Belgian triangulation would have differed at most by 12 metres.

2. By the means of field topographical work and air photos a large scale map, originally a direct enlargement from the 1:80000, was produced of a very high order of accuracy.

3. Boards were eventually produced for the artillery (as explained in detail under "Methods") of such accuracy that had the guns themselves been without error, and the enemy positions known, misses would have been entirely eliminated.

METHODS.

1. In general, and essentially in war, it is necessary to define triangulation points either by geographical or rectangular co-ordinates, the former on the smaller scales, the latter on the larger. The cartographer places these according to the projection used, and it therefore becomes almost a necessity to adopt some form of orthomorphic projection (correct shape), for Bonne's, and some other projections, give rise to errors in bearing of seriously increasing amount on anything but the smallest scale.

For a war of positions it was obviously constantly necessary for the gunner to measure the angle or bearing from his reference point and the distance to the target, and it fell to the lot of the surveyor of the topographical and the field survey battalions to measure these accurately for him; in fact, it became almost his first duty. It became necessary, then, to cover his map with a grid valued northwards and eastwards of the origin at Paris (the Belgium Bonne origin of the grid was at Brussels); a 1,000-yard grid was adopted, and the original French sheets of 20,000 × 32,000 metres, 21,872.3 × 34,995.6 yds., split up into four British sheets of 10,936 × 17,500 yds., 11 grids north and south with overlap of 64 yds. and 17½ grids east and west with overlap of 2.2 yds., numbered, say, 366 N.E., N.W., S.E., S.W.

These sheets were originally direct photo enlargements from the 1:80000 Carte de France to 1:20000, and, of course, faithfully reproduced all errors. The 1:80000 (as has been stated under "Material available") had only rough hachuring to show the hill formations, and originally 5-metre interval form lines were introduced by interpolation from known heights and the general formation of the hachures. This evidently allowed room for errors, and fitting an accurate survey of a run of trenches to a photo enlargement of a rather inaccurate original map was the cause of much heartburning to the young surveyor.

On the map the main grids consisted of squares 6,000 × 6,000 yds. split up into 36 squares of 1,000 yds. side, and numbered consecutively 1—36. These, again, were split up into 4,

"a, b, c, d," and each of these by estimation to 5x measured eastwards and northwards.

These sheets had the value from the origin of the grid printed at each corner.

It often became necessary to resect the positions of heavy, siege or other important batteries in a manner that gave greater accuracy than could be obtainable from plane table work. When three or more trigonometrical points were visible, resections were made either directly by the theodolite or where necessary through a periscope attached to the theodolite. Many instances occurred in which the handy man was able to find a rapid method of obtaining resection which might have presented serious difficulties to the ordinary surveyor. The quickest man at these jobs became the ablest field survey officer. Many cases occurred where it was possible to obtain resections from a partly demolished roof or house, or by removing tiles therefrom, from overturned sugar factory retorts, from mine towers or dump winding stations, or from points quite vulnerable to artillery, at close range to the enemy, and by taking bearings and distance from them to the actual battery position. I can say with certainty that to officers fortunate enough to belong to the staff of field survey battalions, these problems arising daily presented possibilities of applying ingenuity and enterprise that were always a source of keen pleasure and enjoyment, and it is not to be wondered at that such officers, as a rule, loved their work with heart and soul, and if unfortunate enough to be wounded on such duties were most unhappy until fit enough again to be back at their jobs.

2. As soon as it was possible to supply the field survey battalions with sheets, with a requisite number of fixed points plotted thereon, the battalion commanding officer sent out his topographers, and thus gradually the detail was corrected and supplemented until a very high order of topographical map was produced. The work offered in many instances delightful opportunities for exercising ingenuity in escaping observation by the enemy. Hollow artificial trees were of use at times, or one could work, with plane table set up in such a manner amongst the ruins of a house, so that nothing but the sight veins and levels showed above, and in such a position the place of the plane table was often preferable to that of the person.

Of course it was necessary also to produce maps of the area occupied by the Boche, and in general about 30 miles behind his trench lines was done, and here, of course, the surveyor was entirely in the hands of the airmen for his main detail, and he proved a most efficient and capable member of His Majesty's Forces, and rarely, if ever, was sent out to obtain photos of a certain area without returning with the necessary data on plates. These photos were taken generally with a 10-inch focal length lens, so that, say, at a height of 5,000 feet a plate was produced on a scale of 50,000, and so as the height at which the plate was exposed was invariably reported a good initial idea of scale could be obtained, but it rested with the surveyor and cartographer to eliminate errors due to the forward movement of the plane during the operating of the shutter, and to the fact that generally photos were not taken whilst the plane was on an absolutely even keel. This was managed in the following manner: Four or more trig. points were plotted on a plain piece of paper in their correct positions. The paper was then placed on a board movable in all directions, whilst the plate with the same four or more trig. points marked on it was placed in an instrument like a magic lantern running along lines to the board, and illuminated at the back with a strong electric light. In this manner the trig. points shown on the original plate were made to coincide exactly with the trig. points plotted in their correct positions, and at the required scale on the board; the angle of distortion was thus reproduced by the angle and tilt of the board required to make the coincidence, and the plate was then rephotographed at this angle, eliminating the distortion made by the figure of the trig. points. Of course by this method only that area situated within the trig. points was actually correct to scale, but the system

was so extended that generally, wherever photos were available, the information could be used from them accurately for topographical and trench purposes; in fact, so much was this the case that by the end of the war a very much more reliable map than the original 1:80000 Carte de France had been produced over a very large area. It was unfortunate that hardly any of the French cadastral maps of the area under enemy control were available, as they provided a wonderful extension of points for the trig., such as the junction of main roads, etc., which were easily recognisable on air photos.

So much for the general photographic detail, but now what about the levelling and contouring of such areas? By the means of known heights and the stereoscope, and other indications, some officers, of whom Colonel Winterbotham, C.M.G., D.S.O., is an example, became so adept at this levelling, which he himself has described as an after-dinner recreation, that in very fact they might have been over the country itself, so accurate was their reproduction of the hill features.

It must be remembered, however, that there were often serious difficulties to be overcome. Trig. points on photos from heights were not always readily recognisable from the Paris description thereof, and there were no less than six systems of levelling in existence, all of which had to be synchronised to one mean system or to one another:—

Datum. Nivellement général de France....	.00 metres
" Belgian Ponts et Chaussées	2.47 "
" Belgian Nivellement général	2.30 "
" Northern France (système Bourdalou).....	.93 "
" Belgian Nivellement de Précision29 "
" Système Allemand08 "

Captured German maps sometimes helped us to elucidate some of these difficulties.

3. The surveyor was called upon to aid the gunner in many ways. He had to provide him with a board showing him his position, target, reference point, bearing picket, etc. The board was usually a two-ply board with a zinc plate superimposed (not always, however, as some battery commanders preferred one without the zinc, and consequently into which they could stick drawing-pins at will). This zinc had etched on to it the grid lines, and the map was then pasted on sectionally to avoid distortion; on this were shown the gun positions, targets known, reference points known as the R.O.'s, and the angle from this to a picket driven in by the surveyor, so that the gunner could always obtain the angle to any point on the map by actually measuring it on the map, or by placing his gun on to the line of the picket and swinging through to the object, as already explained.

(To be continued.)

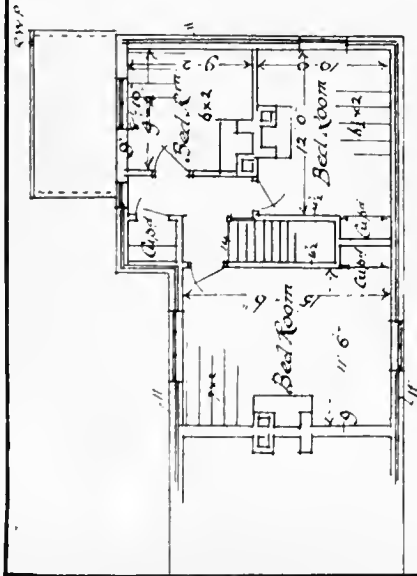
Mr. Sydney Perks, F.S.A., the city surveyor, has designed the tablet to be placed in the Guildhall to the memory of the Corporators, Corporators' sons, and officers who fell in the war.

As certain of the buildings of the White City are to be retained by the Government for a further period, the Committee have decided to postpone the holding of the Inter-Allied Victory Exhibition until the White City is available for the public.

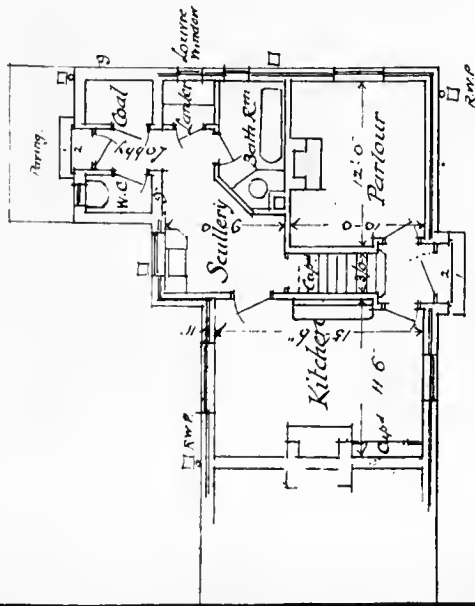
Mr. Arthur Thomas Bolton, F.R.I.B.A., F.S.A., Curator, Soane Museum, will give three Cantor lectures at the Royal Society of Arts on "The Decoration and Architecture of Robert Adam and Sir John Soane, 1758—1837," on May 3, 10, and 17.

The city of Columbia possesses 6½ miles of reinforced concrete sewer, 4,000 ft. of which is above ground. The first plans provided for the use of cast-iron pipes, but investigation showed a marked saving from using precast concrete pipe. The above-ground portion consists of 15 in. and 18 in. reinforced concrete pipe laid on a concrete trestle consisting of a 12 in. by 16 in. reinforced concrete beam supported by concrete bents placed on 20 ft. centres.

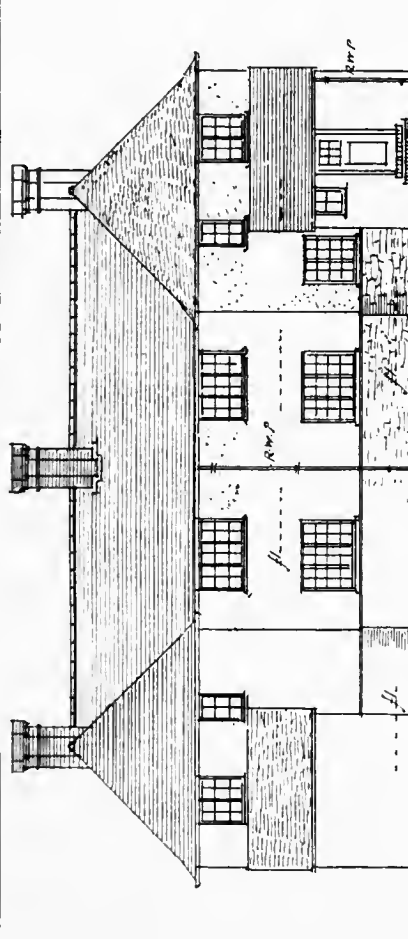
Weston-super-Mare has hit on a novel plan for obtaining houses. Several big cinema schemes are on foot, and the Council has intimated that it will let them go forward only on condition that dwelling-houses to a similar value are erected at the same time. The contractors for the Regent Street picture house had accepted this condition, and had undertaken to erect twelve workmen's dwellings at an approximate contract price of £12,000.



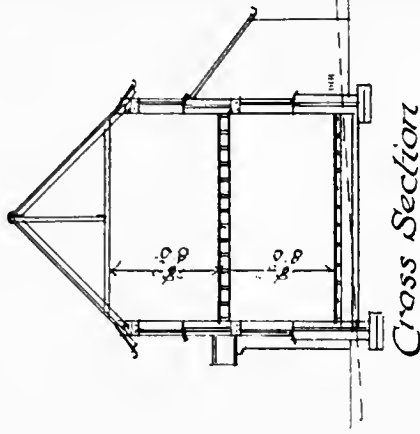
First Floor Plan



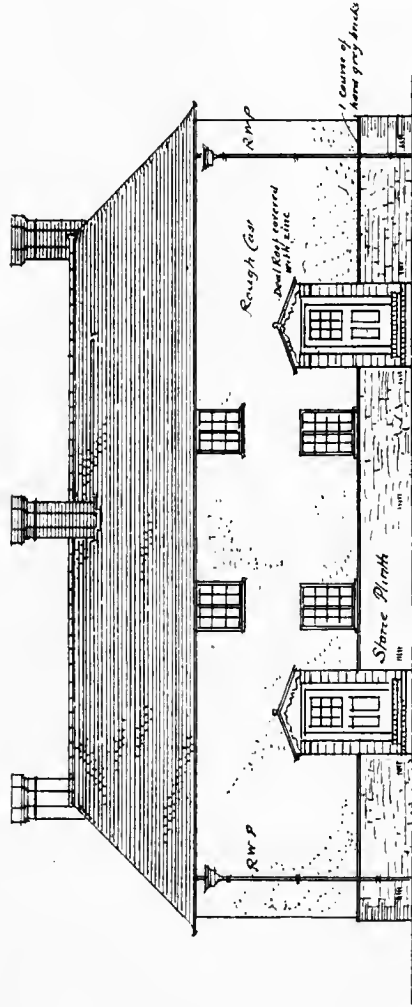
Ground Floor Plan



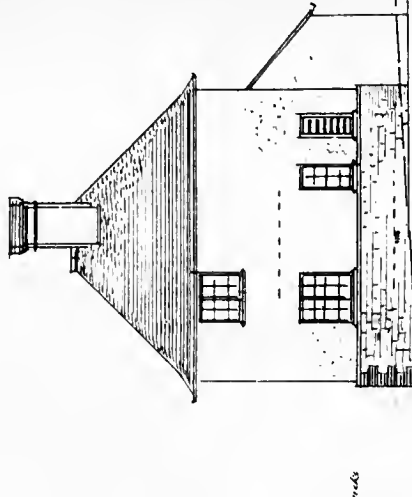
Rear Elevation (South)



Cross Section

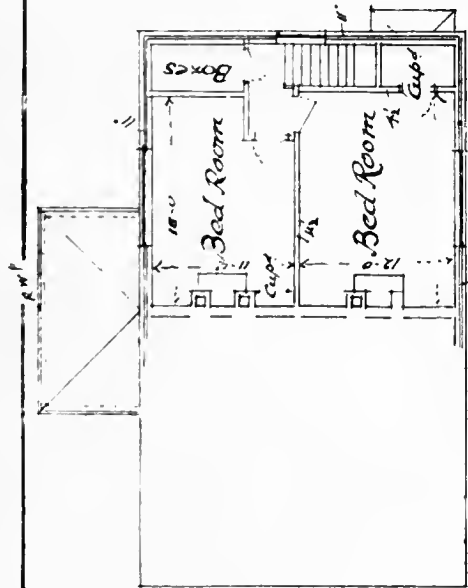


Front Elevation (North)

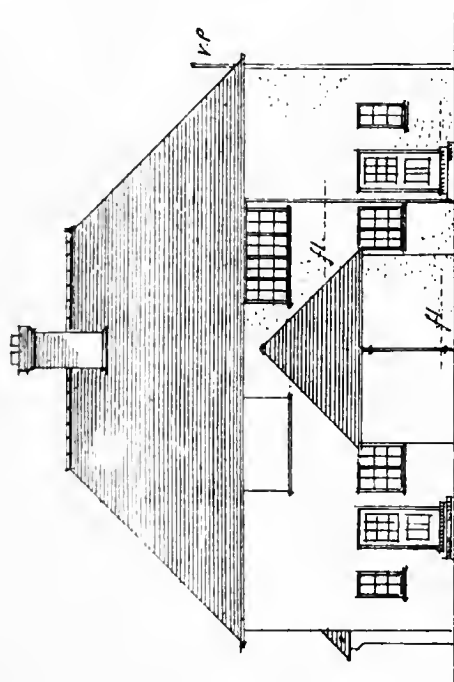


End Elevation

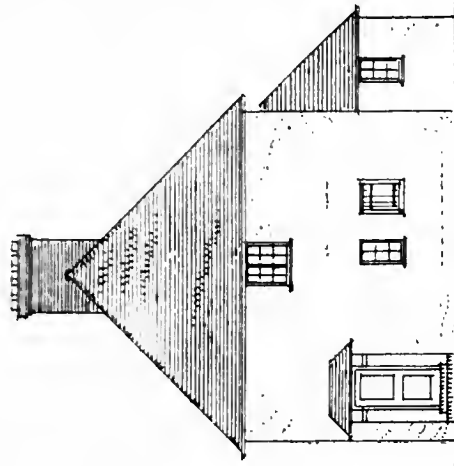
GODSTONE HOUSING SCHEME, BEADLES LANE, OXTED, SURREY.
 Mr. ARTHUR KEEN, F.R.I.B.A., Architect.



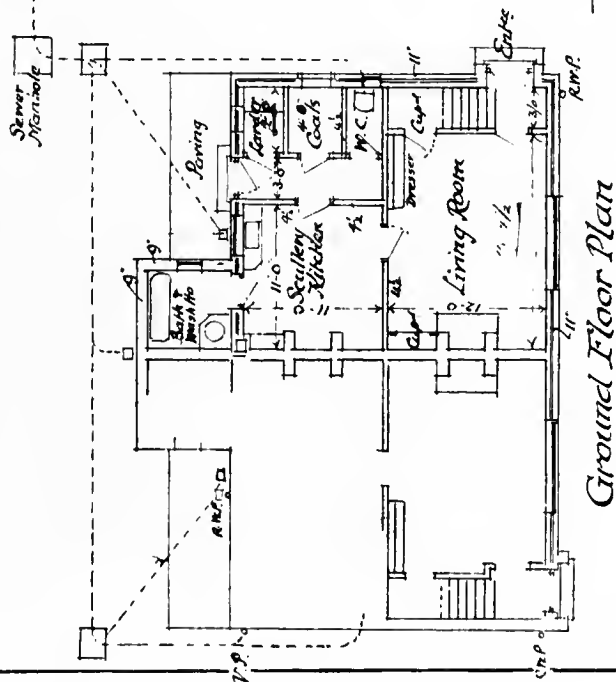
First Floor Plan



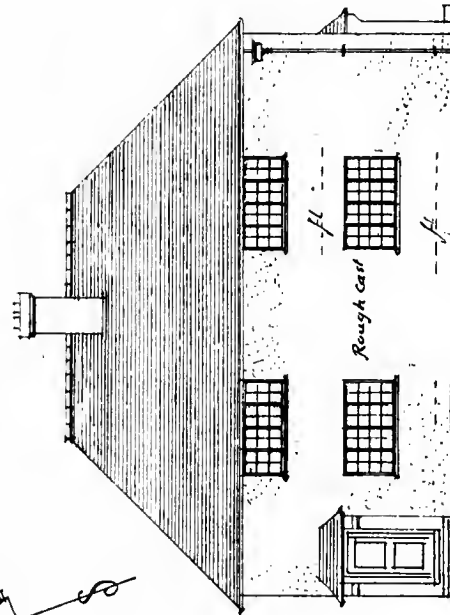
Rear Elevation



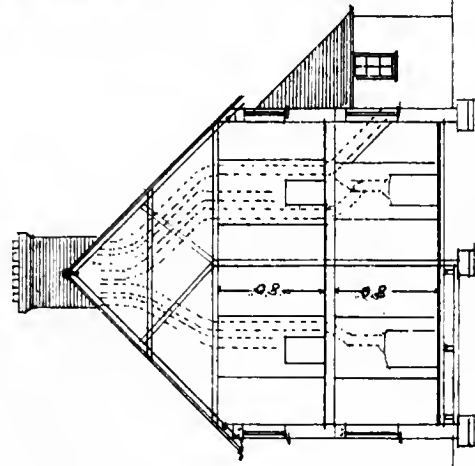
Side Elevation



Ground Floor Plan

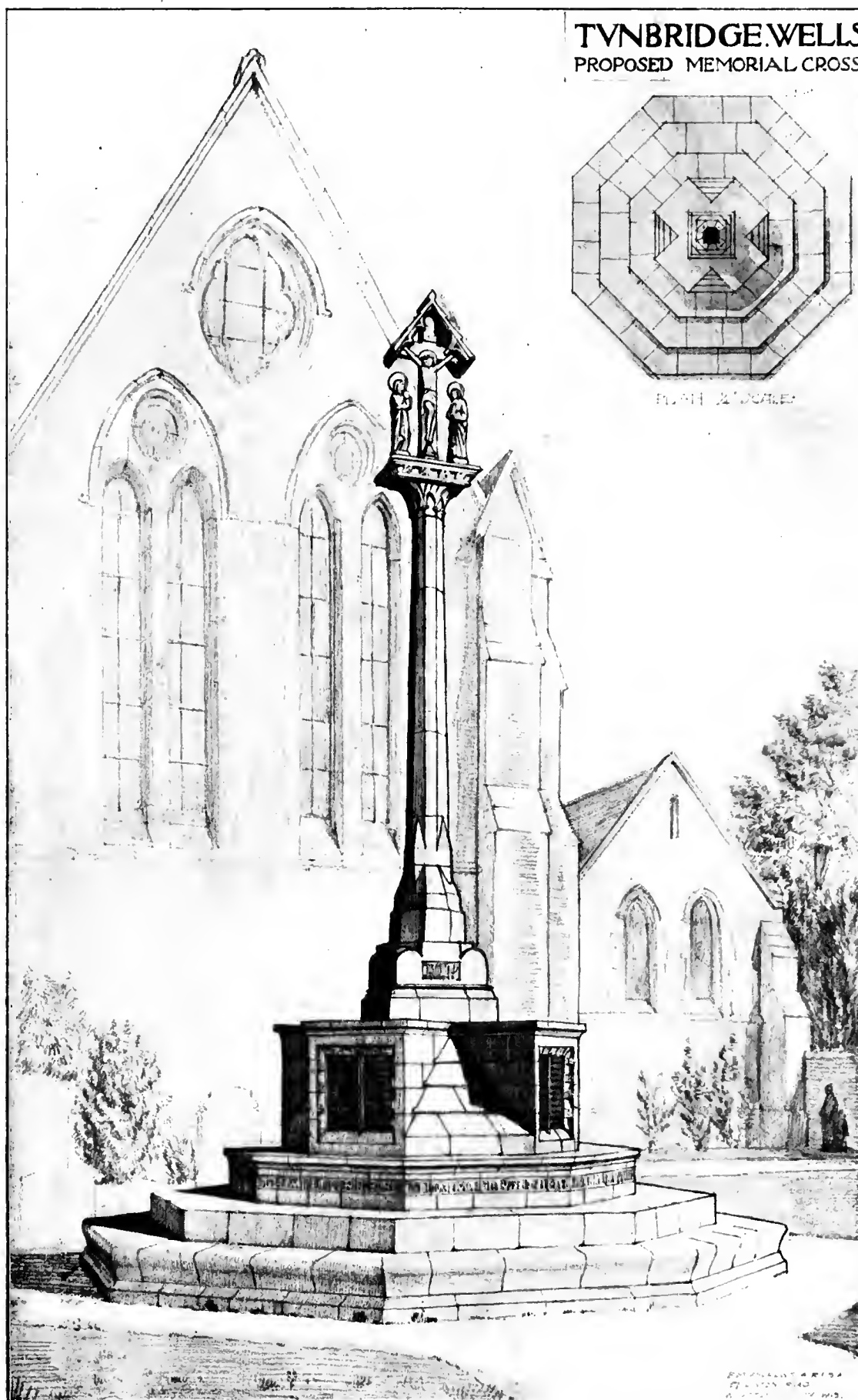


Front Elevation

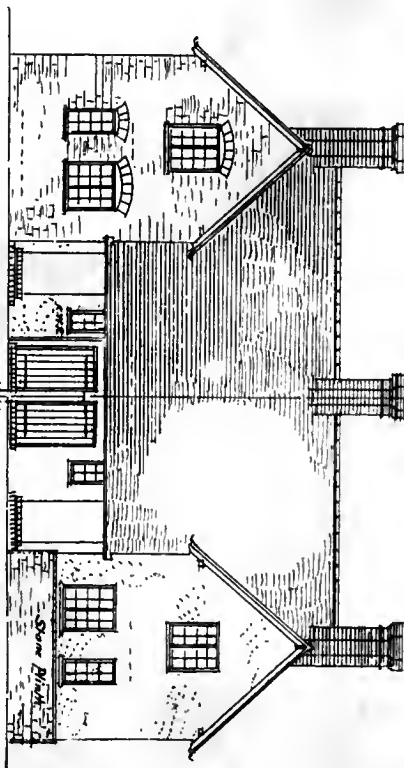
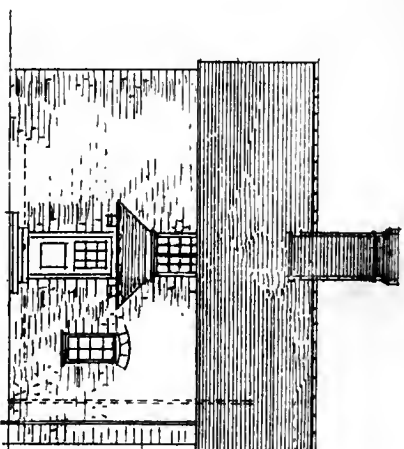
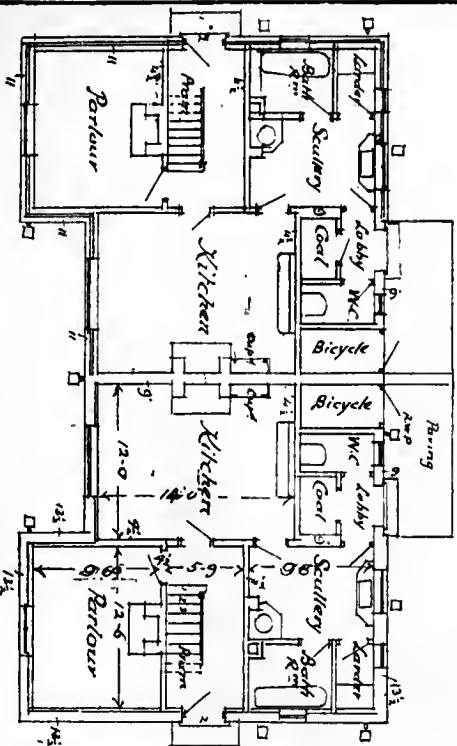
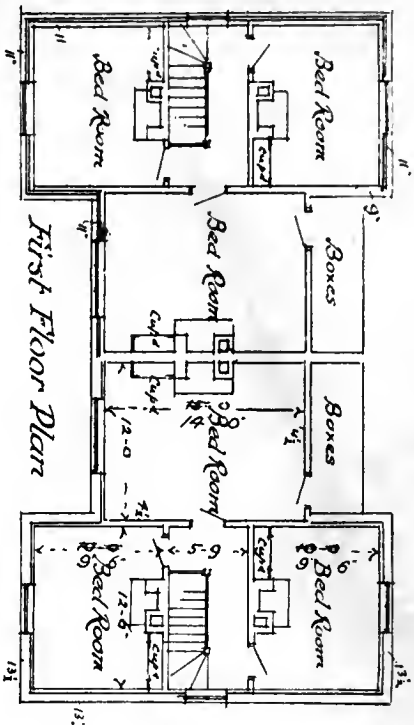


Cross Section

GODSTONE HOUSING SCHEME, BEADLES LANE, OXTED, SURREY.
MR. ARTHUR KEEN, F.R.I.B.A., Architect.



WAR MEMORIAL, ST. BARNABAS' CHURCH, TUNBRIDGE WELLS.
Mr. P. M. ANDREWS, A.R.I.B.A., Architect.

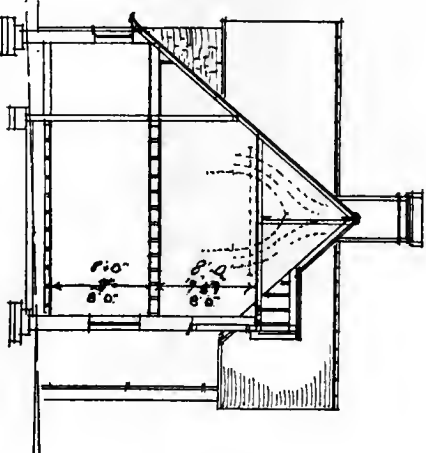


End Elevation
Stone Cottage

Stone Cottage

Back Elevation

Brick Cottage



Brick Cottage

Front Elevation

Stone Cottage

143-146.



CHANCEL SCREEN, SEFTON CHURCH, LANCS., RESTORED IN
MR. W. D. CAROE, M.A.

FEBRUARY 20, 1920.



Y OF THE HON. RICHARD MOLYNEUX, KILLED AT JUTLAND.
F.S.A., F.R.I.B.A., Architect.

Our Illustrations.

CHANCEL SCREEN, SEFTON CHURCH, LANCs.

The old rood screen at St. Helen's, at Sefton, is one of the most complete and beautiful in Lancashire, and has lately undergone a scheme of careful renovation to the memory of Lord Sefton's second son, the Honourable Cecil Richard Molyneux, who was killed at the Battle of Jutland Bank. The screen had suffered seriously from restorations of 1819 and 1843, when its height was reduced some three feet, and it was despoiled of much of its beauty. The ornaments were, however, largely preserved, and have been re-used in their proper places. A careful measured drawing of the screen was made by Richard Bridgens in 1817, before the first restoration. This, and the evidence of the screen itself, have proved invaluable in restoring it to something of its pristine beauty. The work was admirably executed by Messrs. Cornish and Gaymer, of North Walsham. The architect is Mr. W. D. Caröe, M.A. (Cantab), F.S.A. F.R.I.B.A.. The photographs here reproduced were shown in the War Memorials' Exhibition held at the Royal Academy last autumn.

PROPOSED WAR MEMORIAL, ST. BARNABAS, TUNBRIDGE WELLS.

The proposed work has been designed on the lines of the ancient churchyard crosses, of which a number are still extant. The base consists of hexagonal steps, on which are placed four rectangular panels containing the names of the fallen. The shaft is surmounted by a calvary with a penthouse over. The height is about 30 feet. The whole is to be in Clipsham stone, and the panels in Hopton wood, with lead letters. An inscription runs round the base. Mr. P. M. Andrews, A.R.I.B.A., of Ealing, is the architect, and the drawing was shown at the Royal Academy War Memorials' Exhibition.

GODSTONE HOUSING SCHEME, OXTED, SURREY.

The site of these working-men's houses is in Beadles Lane, Oxted. There are three distinct varieties, two being provided with parlours. Some of the buildings are to be faced with rubble masonry got on the site, and some are rough casted. Eleven-inch hollow walls are shown, where bricks are used. The fully dimensioned working plans and sections reproduced herewith to a sufficiently large readable scale, show the necessary points of detail, all of which have been most carefully worked out for economising space as well as labour. Two bedrooms are sufficient for the smaller cottages, which have a good, large living-room and scullery kitchen free from cluttering up of doorways. The larger dwellings have three bedrooms, all with fireplaces. Bicycle standings are provided in the biggest pairs. Mr. Arthur Keen, F.R.I.B.A., of Gray's Inn, W.C., is the architect. A point of interest calling for particular attention is that although officially in the London area some of the houses are to be erected in stone.

Mr. W. Walcot has been elected a Fellow of the Royal Society of Painter-Etchers and Engravers.

The Maidstone Town Council have sanctioned the demolition of a number of small tenements in King Street, on the site of which it is proposed to build a picture palace. The owner has provided wooden cottages for the whole of the displaced tenants, who are to pay a rental of 6s. per week.

THE BUILDING GUILDS.

LONDON MEETING.

The Manchester Building Guild scheme was explained in the Kingsway Hall, Kingsway, last Monday night by Mr. S. G. Hobson, the general secretary of the Manchester Building Guild Committee.

He said that the procedure for a guild scheme in Manchester and Warrington was being followed now in a dozen other towns in Lancashire. He hoped before many weeks had passed that the Manchester Building Trades Committee would be transformed into the North-Western Building Guild. If that should take place, he thought they would not hesitate to offer, above the heads of the local authorities, to build 100,000 houses for the Government. The Building Guild was more capable of building that number of houses than the Government was of accepting the offer. The houses erected under the guild scheme would be built for absolutely net cost, plus 10 per cent. for overhead charges.

Some people were very shocked at this 10 per cent. There was no question of profit involved at all. The ordinary charges for administration, they thought, could be kept down to 2 per cent., but to be on the safe side it had been decided to allow 3 per cent. Then the guild was starting work without any plant. That would have to be bought out of the 10 per cent. They proposed, when this plant was obtained, to vest it in the name of three trustees, and in the deed of trust it would be specified that when a National Guild was formed the plant should be transferred to it. One per cent. would be for contingencies, and the remaining 3 per cent. would be devoted to securing labour for the future.

Under the present system, when a man had no work he was turned off. Unemployment in normal times in the building trade was extremely high. It was intended that every man working for the guild should cease to be a wage-earner. He would be a member of the guild, and draw regular pay throughout the year. Under our present system labour was the last charge upon the industry. Under the guild system it became the first. If care of the worker in rain and fine, in sickness and unemployment did not absorb the remaining 3 per cent. they would know what to do with it. In any event, no kind of profit was to be distributed at all.

Mr. Lewis Watson, of the Operative Bricklayers' Society, and chairman of the Manchester Guild Committee, said he had sounded many meetings during the last six weeks, and at all the workers unanimously were prepared to join in guild work. As a means of testing their sincerity, they proposed to send out a request to every branch of every trade union in the Manchester district asking for volunteers to sign their names upon a sheet. Those names would be registered, and the labour they represented would be used when the guild was ready. In six weeks he believed the Manchester Guild would be at work. They estimated that they could build each house at from £100 to £200 less than the present builders were prepared to do.

Mr. Trepass, chairman of the Warrington Guild Committee, said the Warrington Housing Committee had agreed to erect six concrete houses which were worse than anything erected in pre-war days. These so-called "houses" would cost £835 each, and the economic rent on them would be £1 per week, plus rates. What he wanted to know was, how were the workers going to pay it?

Even if a 50 per cent. economic rent plus rates (which in Warrington would be 19s. 3d. next year) were agreed upon, there would be an advance of 1s. 5d. every year up to 1927, when an economic rent would have to be reached.

Mr. George Hicks, general secretary of the Operative Bricklayers' Society, presided at the meeting, and put a resolution moved by Mr. J. Murray pledging the meeting to support the Building Guild Committee by every means in its power, and undertaking to work in harmony with all Guild Committees formed in the London area. After several questions the resolution was carried with one dissentient.

PROFESSIONAL AND TRADE SOCIETIES.

MANCHESTER SOCIETY OF ARCHITECTS.—At a general meeting of the Manchester Society of Architects on February 4 Mr. Paul Waterhouse, M.A., F.R.I.B.A., gave an address intended especially for students. He said that optimism was essential to success, and spoke of the joy that was to be found in the calling of an architect, and the pride that the student should have in following so honourable a career, which should make up for the lack of material prosperity. Many human suggestions on the relation of the architect to the client were given and the attitude of the profession towards life in general. Mr. Waterhouse also spoke of the attitude of the "Guv'nor" of the last generation towards the pupil and junior draughtsman in his office. Schools are undoubtedly a great advance, and save the student from the uneducated and selfish master at the formative stage; but at the same time we must not forget the advantages of the old system where the good master architect took a real personal interest in the career of his pupils.

LEGAL INTELLIGENCE.

A. G. WORBOYS V. WINSTONE AND CO., LTD.—On February 12 the Complaints Tribunal of the Central Profiteering Committee gave a decision in this case. The Chairman said the Tribunal understood that no payment had been made of the account so far, and therefore they could not order a refund, but they ordered a reduction in price. They were of opinion that a reasonable price which the respondents might have charged for white lead was 82s. per cwt., which meant that a reduction of £1 3s. would be required in respect of that. They thought that for the turpentine 12s. 6d. per gallon might reasonably have been charged, and that involved a reduction of £1 5s.; and they thought that for the linseed oil 11s. per gallon might reasonably have been charged, which involved a reduction of £1 5s. In addition they took cognisance of the fact that a credit note for 6s. 6d. was stated to have been already sent in respect of carriage; but apparently Mr. Westacott had overlooked the fact that 33½ per cent. had been charged on the whole matter, so that in their judgment the credit note should have been for 10s. That involved a further difference of 3s. 6d. Taking all these things into account, the Tribunal ordered a reduction on the whole invoice of £3 16s. 6d. They had serious doubts as to whether they were doing their duty in not ordering a prosecution, but, on the whole, they had come to the conclusion that the justice of the case would be met by the administration of the sternest possible rebuke to the respondents—not merely in respect of their own transactions, which, as he had said, reflected great discredit on them, but also by way of warning to other respondent firms who might appear before the Tribunal with a case based on similar lines. There was another point upon which, on behalf of himself and his colleagues, he would comment by way of warning to other firms who might appear before them in future. If firms chose to do what had been done in this case, namely, to sell goods which might or might not have been badly bought—in this case they were not badly bought—and to say that because they had not bought advantageously they, therefore, were entitled to some consideration, that kind of argument could not be accepted by the Tribunal. If firms chose so to go out of their way, they must expect to be treated before the Tribunal on the same basis as firms who handled such goods in the ordinary course of their trade. They greatly regretted that they had no power to order the respondents to pay the costs of the complainant, and so far as the complainant was concerned they entirely agreed with his observation that he had performed a public service by coming forward and making this complaint. They were much obliged to Mr. Westacott for his assistance in putting the respondents' case before them, and they quite appreciated that it was the respondents' case and not his.

Sheffield master builders have decided to support the Yorkshire master painters and decorators in their lockout of 10,000 painters, dating from last Friday night. The lockout has been arranged in order to suppress the alleged irregular strike of operatives at Keighley and Wakefield, who struck for 3d. an hour increase in disregard of an agreement extending to July next. The strikers demand 1s. 11d. an hour, the same as the building trade operatives.

Our Office Table.

"The Timber Merchant's Handbook," by Frank Tiffany, F.R.S.A. (London: W. Rider and Son, Ltd., 8-11, Paternoster Row, E.C.4, 5s. net), is a good practical guide to the measurement and uses of wood. The author's practical experience as a timber surveyor and arbitrator has been considerable, and every buyer, seller, and user of timber will benefit by the possession of his book; for apart from the present troubles of the trade it has to endure many chronic hindrances, not the least perhaps being the nomenclature of timber, thanks to Professors of Botany, among others, to some of whom all wood that comes to their net seems "mahogany," as Mr. Tiffany points out in his preface.

The demand that is again made for a reformation or removal of the present system of "Castle government" in Ireland is a standing cry, and Irishmen may well wonder sometimes whether anything can ever accomplish that desired end. There might, thinks the *Manchester Guardian*, be made out for Dublin Castle a very good case as the most unfortunate building of its kind in the world. Its very inception was ill-omened, for "coercion" was in at its foundation. In 1205 King John commanded his deputy in Ireland to "commend also our citizens of Dublin that they strengthen their city, and that you compel them thereunto if they should prove refractory"—a form of "commendation" which has become very familiar in Ireland. He went on to ordain the building of a castle, "to be raised in a competent place, as well to curb the city as to defend it." The first injunction has been fully honoured over a very long period. Little of the old Castle remains. The gate towers were pulled down in the eighteenth century; the old Birmingham Tower was shattered by a gunpowder explosion, and was pulled down about the same time. What remains has been described, aptly enough, as "an incongruous mass of architecture, upon the whole, unpicturesque, unsightly, and unsymmetrical." Nowadays, when people talk of "the Castle" they think, not of the miserable huddle of buildings, but of the offices centred there; but no one has any kinder thoughts of Castle officialdom than of Castle architecture.

According to a recent American patent by White Heat Products Co., West Chester, Pennsylvania, U.S.A., artificial stone is prepared by mixing with glass a crystalline mineral body which has been subjected to a temperature exceeding 1500° F. and forming, pressing, and heating the mixture to fusion of the glass binder. The mineral body may be a natural substance such as silica, gormund, or a mixture of bauxite and rutile, or an artificial substance such as carborandum or alundum, and temporary binders such as silicate of soda, molasses, and stale beer may be used.

Last Saturday evening Professor W. Gannon Jones, Dean of the Faculty of Arts at the Liverpool College, delivered an interesting address, illustrated by lantern slides, on "The Concentric Castles of Wales." He said that in mediæval North Wales there were three distinct types of castles. The first were characterised by massive rectangular towers and strong walls, which could only be taken by mining or a long siege. The second type was distinguished in the main by cylindrical towers and the third type was exemplified in the great concentric castles of Edward the First. The concentric castles were by far the most important examples of castle architecture, and were probably based on examples seen by the Crusaders in the East. The concentric Castle was practically a castle within a castle, the stronger within the outer one. Speaking of the famous Eagle Tower of the Carnarvon Castle, the lecturer referred to the legend of the birth therein of the first Prince of Wales. But, unfortunately for the legend, the castle was not completed till 132, and that end of it was built by the first Prince of Wales himself.

The Department of Paintings and the Department of Engraving, Illustration, and Design have received several important bequests and gifts during the past year. Sir Frank Short, R.A., P.R.E., has presented 160 of his mezzotints, aquatints, and etchings in memory of his son, Capt. Leslie Short, who died on active service June 3, 1916. In memory of Sir Charles Holroyd, R.E., late Director of the National Gallery, two of his water-colours and 43 etchings have been given by Lady Holroyd. Shortly before her death in 1919, Mrs. Merriek Head presented 17 water-colours and 13 etchings by Samuel Palmer, who at the beginning of his long career was in close association with Blake and Calvert. Several of the drawings date from his honeymoon tour through Italy in 1839-1840, and belong to a period of the artist's finest work, not hitherto adequately represented in any public collection. Bernard H. Webb, the architect, was always a warm friend of the Museum, to which, at his death in 1919, he bequeathed all his collections. Among these are a large number of water-colours and pastels of the British school, a considerable collection of drawings by old masters, and a large series of modern drawings, etchings, and woodcuts. The family of the late Capt. Guy Baker, in accordance with his expressed wishes, presented twenty-seven water-colour drawings by Wyndham Lewis. This collection is representative of the artist's work in the years preceding the war, and strikes a modern note among the museum collections. The same remark applies to a series of drawings presented by Messrs. Ezra Pound and C. Lovat Fraser, showing different phases of the work of H. Gaudier-Brzeska, who died on active service in France at the early age of 24. A selection from these gifts and bequests is on view in the East Hall of the Museum; and among other gifts there shown are water-colours and drawings by J. Baverstock Knight, H. Edridge, John Glover, Burne-Jones, C. A. Hunt, A.R.W.S., Romilly Fadden, Blamire Young, R.B.A., John Wright, A.R.E., and Lovat Fraser. Among some purchases on view is a series of four studies by Dogas for his oil-painting in the Ionides Collection of the ballet scene from Meyerbeer's "Roberto il Diavolo." It is hoped shortly to place on view in Room 132 a large number of other gifts and purchases made during 1919.

"The Servantless Home, and How to Equip It," by Randal Phillips (London, *Country Life* Office, 20, Tavistock Street, Covent Garden, W.C.1, 6s.), will help all the thousands of middle-class folk who have been demoralised by her slap-dash methods, and are thankfully rejoicing at her exit, to organise the same sort of methods and appliances which render modern business concerns workable. And the book is not a "faddy" one. There are none of the decorations and fittings elaborated out of orange-boxes and the like, so dear to the "artistic" mentor. The purpose of the book is practical, and will enable any housemistress to run her home with a minimum of work and a maximum of efficiency, and to enjoy well-earned leisure and congratulate herself on having eliminated brute labour from housework.

In an address last Monday night at the Ideal Homes Exhibition Sir Charles Ruthen said that he was firmly convinced that the timber-frame house would be extensively adopted in the British Isles before many months had passed, and would take a very important part in the solution of the housing problem. At the end of 1919 there was a total shortage of nearly 750,000 houses in England and Wales. The number needed annually to meet normal requirements was 100,000, so that even if materials and labour were available to erect and complete 200,000 houses by the end of 1920 such a number would only provide the normal supply for this year and 100,000 towards the debit balance. The fact that over three million people in England and Wales were improperly housed was sufficient reply to the prejudiced mind that preferred (for other people) the slum or the gutter to the warm, comfortable timber-frame house.

CHIPS.

Sir John Burnet, the architect engaged by the Government to lay out the war cemeteries of Gallipoli and Palestine, is preparing plans to beautify Ramsgate sea front.

The First Commissioner of His Majesty's Works and Public Buildings has appointed Mr. Hubert Baines, O.B.E., to be chief engineer to H.M. Office of Works, to succeed Mr. H. A. McFerran, O.B.E., who has retired.

The New Malden District Council have accepted a tender of £57,566 for the erection of fifty-eight houses, to be ready for occupation within six months of the signing of the contract. This is the first instalment of a scheme to provide 300 houses.

At the annual meeting of members of the East District Section of the Scottish Faculty of Surveyors, held at the Architectural Rooms, 117, George Street, Edinburgh, last week, Mr. J. D. Gibson was elected chairman of the section, and Mr. Robert Jerdan and Mr. J. G. Hardie, Dunfermline, members of Council.

By a majority of three the Montreal City Council have adopted a resolution favouring the building of a sixteen story hotel, recently referred to in our columns. The chief argument in favour was that the cost of land in the city is so high that it is impossible to erect a ten-story hotel and secure an adequate return on the capital.

The trustees of Sir John Soane's Fund, 13, Lincoln's Inn Fields, W.C.2, will meet at the Museum on Wednesday, March 17, to distribute the dividends which have accrued since January from the sum of £5,000 among distressed architects and widows. Forms of application may be had at the Museum, and must be filled up and delivered there on or before March 2.

That women war workers should be admitted to the building trades was one of the suggestions put before Sir Robert Horne, Minister for Labour, by a deputation from the Women's Industrial League. Sir Robert said he had been struggling for some months to get more labour into the building trades. Nevertheless, it would be holding out false hopes to say there was any prospect of the building trades unions admitting women. So the doctors and the lawyers said for years; but they have had to!

The Ministry of Health understand that some of the building societies whom they have consulted are prepared to make advances to builders, as well as to purchasing occupiers, of houses in respect of which Government subsidies are payable under the recent Housing (Additional Powers) Act. In some cases it is understood that the building society would be prepared to lend up to 75 per cent. of the cost of building to the occupying purchaser, and up to 75 per cent. of the reduced cost (i.e., cost less subsidy) to the builder.

Stamford Parish Church War Memorial was recently dedicated by the assistant Bishop. The memorial, which cost approximately £275, is in the chancel arch, and consists of a moulded oak beam on which rests a large cross ornamented with carved crockets bearing the figure of our Lord and on either side figures of the Blessed Virgin and St. John. Near the organ is a carved oak tablet. The rood beam and tablet are the work of Messrs. Bowman and Son, of Stamford. The figures on the beam are by Tosti, of London.

A special general meeting will be held at the Royal Institute of British Architects on Monday, February 23, when the portrait of the late President, Mr. Henry T. Hare, which has been painted by Sir William Ilewellyn, K.C.V.O., A.R.A., will be unveiled and presented to the Royal Institute. This ceremony will be followed by a lecture by Mr. Jay Hambidge, the distinguished American art critic, on his theory of proportion in Greek art, with special reference to architecture. Mr. Hambidge's investigations in this region have recently been the subject of lively discussion in this country. The meeting will take place at 8.30 p.m.

The mayors of twelve metropolitan boroughs, from Fulham to Woolwich, have agreed to call a conference of representatives from all the city, borough, county, and urban district councils in Great Britain, in Shoreditch Town Hall on April 22-24, to discuss housing and finance. The conference will be invited to propose the rationing of existing housing accommodation until the present shortage is met, to extend direct building by the local authorities, either individually or in co-operation with the building trade unions, and the setting up of local works departments as a nucleus for the transformation of the building industry into a public service.

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OUR ILLUSTRATIONS.

Altar Piece and Screen, Roedean Schools Chapel, Sussex. Messrs. John W. Simpson, F.R.I.B.A., and Maxwell Ayrton, F.R.I.B.A., Architects.
Parish War Memorial, West Hoathly, Sussex.

Strand, W.C.2

Messrs. Sir Ernest George, R.A., and A. B. Yeates, F.R.I.B.A., Architects.
Lych Gate, War Memorial, Nuthurst, Sussex. Messrs. Sir Ernest George, R.A., and A. B. Yeates, F.R.I.B.A., Architects.
Cenotaph to be erected at Jerusalem in Memory of the 60th London Division who fell in Palestine. Mr. E. Wallcousins, Architect.
A Sheet of Old English Furniture Sketches.

Currente Calamo.

Another scheme to build houses with money obtained free of interest is announced by the National United Housing Association of Manchester, which is said to consist as a start of 500 members, many of whom are journeymen in the different building trades. Members are to be gained on the snowball principle, and pay a shilling a week subscription. With 20,000 subscribers, it is expected to start building eight-roomed houses, with a bathroom, at a cost of £600 each, which will be sold by ballot to members, who will pay by weekly instalments in the form of rent. For every four houses built the Association hopes to get the Government bonus of £50 per house, with which it will build one house free of cost. Mr. David Lloyd George is said to have sent the Association a cheque, "and intimated his wish to become a yearly subscriber." It is estimated that, with 20,000 subscribers, it will be possible to build 900 houses in eight years. The housing problem thus solved will, we fear, still leave 19,100 subscribers waiting, even if all have continued their subscriptions, the return of which is provided for to those who wish to withdraw. If many do, we fear the financial basis of the Association will be severely strained ere the laudable object is achieved, to an extent to which its founders are possibly hardly awake, even if their business capacity and their ability to attract competent labour are more real than is apparent.

Listening to the lecturer's references to Wren's able successor, the late Mr. F. C. Penrose, at the R.I.B.A. last Monday night, as many-sided an artist and scientist and as kindly and helpful a gentleman as the great architect himself, we remembered that Tuesday last was the anniversary of the death of Wren, which occurred on Feb. 24, 1723. In three years we shall, or should be, celebrating its bi-centenary. He died at the great age of ninety. It was said of him that he built "the noblest temple, the largest palace, and the most sumptuous hospital in Great Britain." These buildings were, of course, St. Paul's Cathedral, Hampton Court, and Greenwich Hospital. He also

designed the Monument, upon which he intended a statue of Charles II. to be placed. Altogether he was responsible for the erection of fifty-two churches in London. He was a great scientist, and was professor of astronomy at Oxford. Many influential sections should therefore claim their share in the perpetuation of his memory, and we venture to suggest that it is not too soon to commence preparations for it.

Our conveyancing law, which is supposed to have been simplified, is still fertile in fine points. The indirect results of the war have added their own perplexing problems. One of these, which may at any time again arise, was dealt with by the Court of Appeal in the recent case of "*In re Lyne-Stephens' and Scott Miller's Contract.*" The question came up as a Vendor and Purchaser summons before Mr. Justice Sargant. The vendor was owner of a large house at Rehampton, which he had let on a repairing lease expiring in September, 1919, at a rent of £500 a year. During the war the place was taken over for training troops in the Royal Air Force, and when they left after the Armistice, it was in a parlous state of repair. At the auction on August 8 this was stated, and completion with possession was fixed for September 29, when the case ended. The purchaser bought it for £8,900. On August 22, after negotiations, the vendor agreed to accept £2,060 for dilapidations, which was paid him by the lessee, and put into a separate account, pending completion. After that had taken place, the purchaser claimed this money so paid for repairs by the lessee, as belonging to him, as he had bought the reversion. Mr. Justice Sargant held that it was the property of the vendor. Now, on the appeal, this ruling has been confirmed. The purchaser's main argument was that, after the contract and sale, the vendor became, as usual, trustee for him until completion. But the Courts have both held that what the purchaser had bought was simply the freehold with possession, and the lease had only got into the particulars to fix the date. So the appeal was dismissed, the vendor keeps the money paid for dilapidations by the lessee, and the purchaser must do his own repairs and pay all the costs. The contract could and should have provided for this point.

The Manchester Education Committee is discussing the advisability of building temporary wooden schools, instead of using brick, stone, or concrete. At the Harpurhey School, built at the beginning of the war for temporary use until a permanent site could be bought, classrooms have been added since that time. Instead of the corrugated iron which was then generally used for such temporary schools, the building was made of wood lined with asbestos, and the roof covered with asbestos tiles. The construction is simple and effective. Mr. Hey, the Director of Education, has already made the suggestion that the Board of Education should collect all available information about the various alternative types of building already in use for educational purposes, and that the information should be distributed for the guidance of local authorities. He also advocates the summoning by the Board of Education of representatives of a dozen of the chief county boroughs in order to get information about prices and materials. A great step towards the solution of the problem, he believes, would be taken if each of these authorities was then asked to undertake the immediate erection of a specified type of building. Manchester and other towns are seriously short of school space at the present time, and many find that they would have to spend, if they erect schools in brick, as much money on each place as would provide three places in some other kind of building. It is a question of the balance of advantages. Is it better to accommodate a large number of children in certain types of building which would not be permanent, comparatively speaking, or to provide schools of a much more permanent character for a smaller number of pupils, and postpone the building of the permanent school till times are better and costs lower?

On Monday next, Mr. Alfred H. Hart, F.R.I.B.A., will show in Messrs. Walker's Galleries, 118, New Bond Street, a comprehensive collection of about eighty landscapes and water-colour sketches of old English buildings of a picturesque kind in Dorset and the neighbourhood of Enfield. We especially noticed Godlington Manor House, built of dark stone and with dormered upper floor roofed with Dorsetshire slates. The enclosed garden

in front rises within masonry walling. Near this, No. 4, "Afternoon" in a village street, with its rural cottages and lichen-covered thatch done in sober colourings. Temple Bar at Theobald's Park is given as seen from the roadside, and hard by hangs a study of ancient boarded houses in the narrow street leading to Lyme Regis Harbour, very sunny in treatment. No. 17 is a street view of the Tower of Waltham Abbey, excellently rendered, the red and blue flags being of much value amidst the brown and grays of the surrounding architecture. Kingston, near Swanage, is bright and pretty, very similar in scheme to No. 31, called "Early Morning in September." No. 28, a "View from Corfe Castle," is quite one of Mr. Hart's best landscapes, with its sandpit and the viaduct figuring in the foreground. Mr. Hart has caught the colouring and atmosphere so typical of Dorset, especially in "The Courtyard at Bridport," and the delightful old twisting street at Buxton, in Dorset. No. 75 is another capital water-colour from the same place. The outside timber staircase of the Hotel at Fakenham in Norfolk is shown set against the tile-hanging over the entrance from the high street into the yard.

When Mr. J. Begg, the Consulting Architect to the Government of India, went on eighteen months' furlough last spring, no one was appointed to officiate for him, and it was rumoured for some time previously that on Mr. Begg's retirement the appointment would be permanently abolished. If that is so, it is, in our opinion, a mistake. It will no doubt be eventually proclaimed that as the local governments now have architects of their own a consulting architect to the Government of India is no longer a necessity. But that is not admissible. For many reasons, as our contemporary *Indian Engineering* contends, the greater the number of architects employed the greater the need for a co-ordinating head. In a country like India, where modern architecture worthy of the name is in its infancy, the provincial architects should be kept in touch, and an annual conference under the chairmanship of the architect with the Government of India should be a feature of the service. The annual architectural review should also be maintained, and it is only at headquarters that it could be edited. It would be essential even if the head consulting architect, by reason of the many provincial architects, had no designing work to do. It is ridiculous to suppose that even in that case he would be idle, but as a matter of fact it is known that Mr. Begg had ample designing work to the end, and in addition was frequently in requisition in the provinces for the value of his advice. In India for many years buildings have been created which were eyesores. Possibly it will be urged that the régime of the old military engineers and of the later civil engineer architects having passed away, the professional architects in the provinces will be able to prevent the perpetration of the former reproaches without the aid of the

Government of India. We doubt it. Isolated architects are liable to be coerced against their better judgment by ignorant authorities, and often need support. It is for every reason desirable that there should be a co-ordinating head in order that the architecture of India of the future may progress on right lines, and be a real live thing, and an influence on and an index of the creative art of the country, instead of a bundle of capricious fancies.

One of the aspects of registration is dealt with by a correspondent of *Building*, Sydney, N.S.W., who points out that registration will mean a great advance in building design; the ordinary box design of cottage will vanish, as designed by the builder, and architects will have a fair go. Another matter urged is that all plans must be submitted to Councils for approval. These plans are generally recommended for approval by inspectors, who practically know nothing about building construction. The State (N.S.W.) Bill for the Registration of Architects was read for the first time on November 3 in Committee of Parliament. The Minister, Mr. James, explained the provisions, and noted an addition to the powers under the Bill for the continued registration of an architect after his decease, such permission to be terminable on the winding up of the estate. The Minister's main argument for the Bill generally was that it is necessary in the present day for houses to be designed in a sanitary and comfortable manner, and that we should have properly qualified men to do the work. This argument falls far short of expressing the importance of the Bill, and it is a pity that some architect member did not think it necessary to give eloquent support to this important measure. The only notice of the Bill by members of Parliament was that of Mr. Simon Hickey, who could hardly be qualified to plead the architects' cause, in fact, the burden of his eloquence was to demand that the period of qualifying practice should be reduced from four years to nothing, and one understands his democratic principles from the following dissertation. He said, in reference to persons applying for registration: "Having been probably a mechanic or a builder, with a natural aptitude for drawing plans and drafting specifications, he hangs up his shingle in the competitive field and survives. That ought to be sufficient evidence that that man should be regarded as having a vested right in the continuity of his profession." Nobody seems to have noticed that such an argument effectively ignores the necessity of the Bill at all, for, neither "natural aptitude for drawing plans, drafting specifications or hanging up shingles" could possibly be accepted as evidence to that capacity which the Bill aims at having in the registered architect. For some time past the question of registration of architects has been before the Tasmanian Institute of Architects. The matter has been delayed on several occasions in the hope that one at least of the mainland States would pass an Act

which would serve as a precedent. As a result of the Federal Conference, the Tasmanian Institute has resolved to take immediate steps to prepare a draft Bill, and have the measure brought before Parliament during the present session if possible.

ELECTRIC LIGHTING AND WORKS COSTS.

The reduction of works costs is a matter of absorbing interest to every factory manager, and an attempt will be made in this article to show how in many cases this may be accomplished by the aid of electric lighting.

Works costs are generally considered, not as an actual and definite amount, but simply as a percentage of the realisable value of the total output. Sometimes it is possible to reduce this percentage by careful economies in working. Generally, however, any reduction of works costs will be the result of increased production, so that, instead of the labour and overhead charges having to be shared by, say, 10,000 articles, they will be spread over 20,000.

In a previous article it was shown that improvements in the artificial lighting of certain factories had brought about increases in output of from 10 to 30 per cent. during the normal working hours. In each of the instances given the improvement in the illumination was the result of using half-watt type electric lamps, in properly designed reflectors. An attempt was made to provide artificial illumination, which should permit the same degree of working efficiency as daylight. Judged by results, the attempt was entirely successful, because the average increase in production due to the improved illumination was roughly equivalent to the amount by which production under the previous inadequate lighting had fallen short of daylight figures. Since, however, artificial lighting is not generally used for a longer average daily period than about two hours, it is obviously not possible under present working conditions in the majority of factories to influence more than 25 per cent. of the total output.

SAVING OF OVERHEAD EXPENSE.

There is, however, another very important consideration, and that is the saving in overhead expense which may be effected by the multiple-shift system rendered possible by adequate and well-arranged electric lighting. In the case of a factory at present operating at its maximum capacity for the ordinary eight-hour day, there are two alternatives available if it is desired to increase output. One is to extend the factory and lay down additional machinery, and the other is to use the plant by night. Night work in the past has generally been regarded as an emergency expedient, and has not been considered a good system for ordinary working. The reason that has been given is simply that men cannot work efficiently under artificial illumination. With most artificial lighting this is undoubtedly and regrettably true. But in view of the many economic advantages of the multiple-shift system, it is worth while considering whether it is not possible to light a factory at night so that the operatives can work as efficiently and comfortably as by daylight. In order to do this, it is necessary to have some idea of the average daylight values required for various processes, and then to install electric lamps which will ensure an

equivalent illumination. On a bright sunny day the light intensities may assume terrific values, but investigation has shown that, according to the nature of the work, daylight intensities of from 5 to 10-foot candles are sufficient. The daylight is, of course, well diffused and free from glare. If these characteristics can be reproduced in the artificial lighting, there is no reason why night work should not be just as productive as day work.

Now, to produce an artificial illumination of from 5 to 10-foot candles would, under normal conditions, require an energy expenditure of about 1 watt per sq. ft. of floor area. Taking this figure, and assuming that the cost of electricity is 2d. per Board of Trade unit (1,000 watt-hours), it will be seen that the cost of lighting for night shifts totalling 2,500 hours per year is 5d. per sq. ft. (The price of 2d. per unit could be obtained in many places for a guaranteed and large and regular consumption.)

On the other hand, if, in order to double production, it were decided to double the size of the factory and operate only by day, a comparison of the 5d. per sq. ft., which is the annual cost of the electric lighting, with the amount per sq. ft. represented by the cost of the additional plant and building, will make it evident that artificial lighting of daylight quality may have an important bearing on overhead charges. It is obviously not possible to give precise figures as to the yearly cost per sq. ft. of plant extensions, but according to the class of work and kind of machinery required it might be roughly estimated at from 5s. to 10s., including interest, depreciation, and taxes on the new building and equipment.

As an illustration, let us take a factory of 20,000 sq. ft. At present the factory is working only in the daytime, and uses very little artificial light. It is desired to double the output. The cost of artificial lighting on a daylight standard will be roughly £416 per annum for 2,500 hours of night work. In order to double the size of the factory and plant, a yearly charge of at least twelve, and probably twenty, times this amount must be incurred. An annual expenditure of £416 on electric lighting will, in other words, have the same effect on production as could be obtained by erecting buildings and putting down plant at an investment depreciation and taxation cost of £4,992.

REDUCING LIGHTING COSTS.

In a great many cases an improved and thoroughly efficient system of electric lighting will cost no more than that previously used. For example, in a factory at present adequately lighted by means of ordinary metal-filament lamps, the substitution of half-watt type electric lamps of the same total candle-power would reduce the operating cost by nearly 50 per cent. On the other hand, if a better illumination were required, the original intensity could be almost doubled without any increase in running expense. Considerable economy may also be achieved by the use of properly designed reflector equipment, which, by throwing the light where it is wanted instead of allowing it to waste itself in useless directions, will very greatly increase the effective illumination.

SECONDARY ECONOMIES.

In factories where electric light is not at present used the scope of economy is much enlarged, and we have to consider, in addition to the economies resulting from increased production and decreased

operating cost, the by no means negligible saving in decorations, stock deterioration, insurance, etc.

Electric light, being absolutely clean and fumeless in operation, does not blacken ceilings, soil paintwork, or damage stock. These savings are difficult to compute from the outside, but every factory manager can make a rough estimate of the yearly expense in which he is involved by the use of a flame-producing illuminant. Whatever the amount, it may be entirely eliminated by the substitution of electric light.

Another economy relates to fire risk. In premises uncovered by insurance the advantage of using the perfectly safe electric light is obvious. And where the risk is completely covered, there is also the advantage of a reduction in premium which can generally be obtained in respect of electrically-lighted premises. Even if fully insured, a prosperous factory is bound to lose money by a fire.

INSTALLATION AND MAINTENANCE ECONOMY.

Although the most important considerations in any system of electric lighting are efficient operation and effective illumination, some attention will naturally be given to such matters as the cost of installation and maintenance. The factor which has the greatest influence on installation cost is the number of points and the number of lamps per point. If it were possible, the most economical way to light an interior would be by means of a single gigantic lamp in the middle. This is not generally possible, partly because there is no single lamp big enough to illuminate a large interior, and partly because, even if the light were adequate, it would be so badly diffused and uneven as to hinder rather than aid vision. With modern diffusing glassware and reflectors suspended at a considerable height above the working plane (as in the aeroplane factory referred to in the previous article), comparatively large lamps up to 1,000 watts, widely spaced, may, however, be used with excellent effect. It costs less to buy one 1,000-watt lamp than ten 100-watt lamps, and incidentally the larger lamps are slightly more efficient. Also the use of a few large units instead of many small ones will reduce the expense of wiring. So long as the requirements of good diffusion and uniformity are fulfilled, it is advantageous from every point of view to use a few large units in preference to a greater number of small ones. In the total cost of electric lighting the cost of cleaning the equipment is by no means a negligible item, and the wise factory manager will consider this point when he buys the lighting equipment. This expense will, of course, also be influenced by the number of fittings and lamps used, and will, indeed, be practically in direct proportion thereto. Apart from this, it is altogether a question of fittings design. Fittings for industrial use should be constructed in such a way as to collect the minimum of dirt, and should be capable of easy cleaning and repair.

Mr. Edmund Jeeves, who has held the position of Surveyor to the Melton Urban District Council for nearly thirty-six years, has retired. Mr. Jeeves is succeeded by Mr. Jarvis, Deputy Surveyor at Erih.

Mr. Fernand Billerey meets students of architecture at No. 10, Grosvenor Road, Westminster, on the first and third Wednesdays of each month to discuss their work and set subjects for practice. He will be pleased to admit those who may be introduced or who take a genuine interest in the study of architecture. There is no fee or charge in connection with this.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A special general meeting of the Royal Institute of British Architects was held on Monday, the business being, first, formally to unveil a portrait painted by Sir William Llewellyn of a Past President, Mr. Henry T. Hare, and, secondly, to hear a paper by Mr. Jay Hambidge on Greek design.

The Hon. Secretary, Mr. Arthur Keen, unveiled the portrait. Before doing so he said that the Institute was the possessor of a very large number of treasures of a rather notable kind, which very seldom saw the light of day. But the treasures they set the greatest store on were hung out on the walls of the common room for every one to inspect. These were their family portraits, extending in an ever increasing line. They were works of art of no mean order, and the Institute valued them highly in that respect. But their main interest, of course, lay in the fact that they recalled men of whose work in the profession the Institute was justly proud, and for whose work on behalf of the Institute, carried out sometimes in circumstances of the greatest perplexity and difficulty, he trusted they were all properly grateful. These men had devoted abilities of quite an exceptional order to building up an organisation which, all criticism notwithstanding, possessed at the present time dignity, authority, and power.

Of Mr. Hare himself, the speaker said that he had first gained an insight into his character when Mr. Hare had been the assessor in a competition, and then he had been profoundly struck with the simplicity and directness, combined with a certain unquestionable sense of authority, that had been shown in the award. Many people imagined that Mr. Hare was one who had soared suddenly and immediately into unquestioned success, but he believed Mr. Hare could tell of long nights and laborious days spent in unrequited toil before he achieved the success that ultimately came to him. He had won his way into the esteem and even the affection of the other members of the Institute, but they did not appoint Presidents on such grounds as that, but because of their professional record, initiative, driving power, and capacity for representing in an adequate way interests that were far too serious to be lightly entrusted into anyone's hands. He had been extremely well qualified for the office of President, and had not disappointed them in any way. His work had lain to a very large extent in the area of competition work, and it was due in no small measure to him that the whole system of architectural competition in this country had been lifted on to an entirely new footing. At the present time no architect need feel any hesitation about entering a large public competition. He need have no fear that there would be any irregularity in the conduct of it or any unfair influence in the distribution of the premiums.

Speaking of another direction in which Mr. Hare had applied his abilities, Mr. Keen said that the Public Libraries Act was not a thing of very long ago, and when it was first put into force very few architects realised what was expected of them in connection with it. Mr. Hare had applied himself with singular vigour to the problem, and it was he who had really established the standard of the public library to-day. At the outset it had been extremely difficult to know what rooms there should be, what relation they should bear to each other, how the books should be arranged, and how the public should get access to them. There were also questions of lighting and control. Many things on which the success of the library would depend were not then known, but Mr. Hare had shown the way, and now the average public library was a building we had no need to be ashamed of.

The speaker then unveiled the portrait amid much applause.

Mr. Hare said that until he listened to the extremely flattering account just given of his career, he did not know that he had done so much. (Laughter.) He had been a con-

tinuous member of the Council for something over twenty-five years. The interests of the Institute always held a very important place in his thoughts, as he believed that the interests and activities of that Institute were for the benefit of architecture as a whole. It had accomplished a very great deal, and architecture to-day occupied a very different position in the esteem of the public from what it had done twenty-five years ago. (Applause.)

The President said that he had the very pleasant duty of accepting the portrait of their old friend and President. They would be glad to have any portrait of Mr. Hare, but this was a very beautiful picture, which they would be proud to possess, whether it were a portrait of Mr. Hare or anybody else. (Applause.)

PROPORTION IN GREEK ART.

Mr. Jay Hambidge then read his paper. He said that eighteen years ago he had been the guest of the R.I.B.A., the late Mr. F. C. Penrose having been his sponsor. At that time he had had the advantage of having in his studio all the notes and memoranda made by Mr. Penrose during the early days of his work at Athens. In many conferences he and Mr. Penrose had discussed together this curiously illusory and subtle problem of Greek design. He had been, as stated, present when Mr. Penrose read his paper on the Ionic Greek, and Mr. Penrose had been present at a meeting of the Hellenic Society when he (Mr. Hambidge) had read a paper which was the first on the subject that he was now putting before this meeting. Mr. Penrose had said on that occasion that his (Mr. Hambidge's) procedure was eminently scientific, quite reliable, and that he hoped the matter would not under any circumstances be dropped. He (Mr. Hambidge) had left England very shortly after, and some of the gentlemen at the British Museum had then told him they would give him twenty years to finish the subject he had begun. At the end of eleven years he had been able to put the finishing touches on the work he had been carrying on; but the matter had then to be put on one side because of the war. He had, however, been asked to lecture before American artists and architects upon the bases of Greek design, and, after the first lecture, their enthusiasm had so grown that fifty-five consecutive lectures were given. The hall in which he gave the lectures was about as large as the one in which he now was, but the audience increased until the Health Board and the Fire Department interfered. It had been a unique series of lectures, and he now frequently met men who had attended them, and who said that the old days that had preceded it would never come again.

Coming more closely to grips with his subject, Mr. Hambidge said: When we measure the greatest length and the greatest breadth of a Greek temple, a Greek unit of pattern, a Greek bronze or a Greek vase of the best period, we obtain the end and side of a rectangle. The lines which we thus obtain are almost always incommensurable or unmeasurable one with the other. As areas, however, these rectangles possess a fascinatingly curious commensurability. They are extremely easy to construct, and, moreover, belong, or may be reduced, to one or two classes. Further, we almost invariably find that the details of a Greek design are logical parts of its containing rectangle. In fact, this is the acid test by which we determine the grade of planning knowledge possessed by the Classical designer. For example, if we measure the greatest height and the greatest width of a fine vase in bronze or clay, we find that the width of the foot, its height, whatever definite subdivisions there may be, the width and height of the lip, the height and width of the neck, and, in the great majority of cases, the ornamental band usually found underneath pictorial compositions, are all logical and direct submultiples of a peculiar kind, of the containing or overall rectangle. If this does not prove to be the case, then the example is excluded as an exception. When Greek designs were first measured, the astonishing fact was revealed

that the measured lines were incommensurable, i.e., one line could not be divided one into the other. In later days certain enthusiastic archaeologists claim to have discovered round numbers in some Greek measurements. It has been claimed, for example, that the stylobate flank is exactly 200 Olympic feet. Without questioning the accuracy of the modern interpretation of the Olympic foot, or accepting it as established, the fact remains that other lines of the ground plan, such as the façade width, the enclosing or subdividing lines of the cella, etc., cannot be divided into this so-called line of 200 feet. But if we take this same temple plan and consider the rectangle it furnishes, also the rectangle of the plan of the cella and the column arrangement, we see immediately that they belong to a class of rectangular shapes which seem to have been well known to Greek designers for generations. Moreover, we recognise at once that the architect of the Zeus temple used a different type of rectangle from those we find on the Acropolis at Athens. Theoretically, we should find round numbers in some shape in Greek design, but it is not likely that we should find them more than once or twice in any specific example. This is a very astonishing situation. As practical men, we know that before work can be carried out by workmen some measuring method must be employed which produces commensurability. For this purpose we use the foot or the metre and divide it into even fractional parts. An exhaustive investigation of Classic design shows clearly that in the early part of the sixth century B.C. Greek craftsmen were using a measuring method wherein commensurability of lines was an essential feature. And that some time during this century a change was made from the older to a newer system. The essential base of this new method was incommensurability of lines, but measurability of area. The first system depended upon a unit of some sort. It is not necessary for us to know what this unit was; it may have been a cubit, a foot, a hand, or something quite arbitrary. The point to bear in mind is that measurability of line or area will always remain measurable no matter what that unit may be. A diagonal to a square in relation to a side, for example, will remain a diagonal to a square, whether we use a foot, a metre, or any other length unit, or whether we fix it arbitrarily by construction. It is because of this fact that we are able to create an instrument for analysis which will determine accurately the character of a measuring scheme in any terms we may decide to select. The determination of the character of a measuring method in design in reality means the determination of the grade of symmetry, using that word in the Greek sense of analogy or relation of part to whole. In this connection it is advisable to stress the point that design means very much what the word implies; that is, intention. Before we recognise a design as such there must exist in it an arrangement of elements of some sort, which bear to each other and to the whole some degree of relationship. This may be conscious or unconscious on the part of the creator of the design. That there was intention on the part of the designer to make this relationship depend upon a definite proceeding at certain periods of man's design history we know, because treatises written upon the subject as well as plans themselves have survived. For the purpose of determining the grade of symmetry in a design, however, there is nothing better than the design itself, provided that we have the proper instrument for analysis. Recognition of the necessity for such an instrument led me some twenty-three years ago to undertake an examination of the basis of symmetry in nature.

Mr. Hambidge continued that examination of natural symmetry had developed the fact that there were but two phases of this phenomenon which could be of use to design. One of these was observable in the crystal and other regular pattern forms, and to this he had given the name of static symmetry. The other phase was to be seen in the phenomena of leaf distribution in plants and in the curious asymmetry balance of form

in the shell. To this phase he had given the name of dynamic symmetry, because it appeared to be the orderly arrangement of elements in growth. In man's design efforts the static type was more or less spontaneous, was, indeed, the type used consciously and unconsciously; but it was difficult to believe that the dynamic type could be employed unconsciously. When the general principles in these two types of symmetry had been worked out, and their operating technique developed, it was found that the static was the type existing in the design products of all nations excepting the Egyptian and the Greek. The Greeks had practically exhausted many phases of this dynamic type as early as the fifth or, some thought, even the eighth century B.C. The Hindus also had been familiar with many of the basic facts of dynamic symmetry. This we learned from an early Hindu work termed *Sulvasutra*, meaning the rules of the cord.

Mr. Hambidge explained how the ancients worked out difficult mathematical problems in connection with building, land surveying, and so forth by means of ropes and pins. The method, he said, was not entirely unknown to-day. He had seen a carpenter in America establish a right angle by dividing a rope into twelve units. Three of these he placed along an established line, four the other way so as to form the right angle, while the remaining five were the hypothenuse. "Rope-stretching" was a recognised science in Egypt as early as the time of Amenemhat I., and the beginning of the practice must have long antedated that period. Dynamic symmetry showed that it must have been out of some such practice as rope-stretching that the basic ideas of correlated or formal design in Egypt and Greece had been developed. Design analysis in general showed that the spontaneous method of measuring was linear. In our own day we used the linear unit, and produced static symmetry of the most commonplace kind, but the facts appeared to justify the assumption that some genius, undoubtedly in Egypt, but possibly in Greece also, after a linear scheme had been in use for some time, made the extraordinary discovery that another method of measurement was possible—that a diagonal to a square in relation to a side produced shapes which, while incommensurable as lines, were delightfully measurable as areas. Later still, some other observant designer hit upon the idea that the diagonal to two squares in relation to the side of one of these squares supplied a much more powerful and flexible method of area measurement; this latter method was the most satisfactory scheme so far discovered for correlating the elements of design.

Mr. Hambidge continued: Owing to his understanding of a method of measuring by areas so simple that a string and a few pins, or a string merely held in the two hands, is all the instrument necessary, the Greek designer had knowledge of an infinite series of remarkable shapes entirely unknown to the modern designer. We may use strong emphasis on this point, because extraordinary precautions have been taken to ensure accuracy of results. The Parthenon at Athens, of course, stands on Penrose's measurements. When we consider the ground plan of this building as a rectangular area (this area must include the Euthynteria or lowest levelling course) and divide the end into the side, we obtain a ratio which is immediately recognisable as belonging to the series of dynamic shapes mentioned. Penrose was most painstaking in his survey of this building, so we may take his figures, and, without making a drawing or diagram, prove the correctness of the measurable area scheme by a little arithmetic. When we follow out the logical process of subdivision which is a peculiar property of this particular rectangle, we find that every detail of this ground plan forms part of an arrangement wherein the basic design idea is similarity of figure. The main motive is a square plus an area obtained from a diagonal to two squares. The principle by which the subdivisions are obtained depends upon establishing a reciprocal to the major area. This idea of a reciprocal to a shape seems to be quite unknown to modern design, but there is overwhelming evidence that Greek designers thoroughly understood it.



GROUP OF THREE COTTAGES BUILT OF AERO BLOCKS.

The division of the area of the Parthenon ground plan results in an arrangement of similar figures, in which the column centring plays the most important part; this includes the relationship of the neighbouring columns to the angle columns. The error throughout is the error of workmanship as Penrose's measurements disclose it. After the ground plan we may take the façades and all their details, such as columns, architrave, triglyph, and metope, or pediment. Further, we may unfold the buildings; i.e., place the front and side elevations, with half the roof on either side, in two dimensional positions on the four sides of the ground plan and obtain another larger rectangle. In this shape every superficial square inch of the exterior of the building may be inspected. This new rectangle will be found to belong to the same base as the rectangle of the ground plan. In other words, the building supplies us with an archetype of a peculiar character. Moreover, it is easily proven that this particular theme has a base in nature.

Subsequently Mr. Hambidge applied his theories to Greek vases and other examples of classic design. He said that measurements showed that 80 per cent. were based upon a diagonal of two squares as a measuring base, 10 per cent. were on the diagonal to one square, about 5 per cent. were static and the remainder were indeterminate.

Lantern slides further illustrated the theory.

Sir Cecil Smith moved a vote of thanks. He said that he had known Mr. Hambidge for fourteen years, and Mr. Hambidge had been talking of these things during the whole of that time. He was not himself an architect, but he hoped that what Mr. Hambidge had said would cause those who were in that profession to go seriously into the theory that had been put before them. They would find if they went into the relations of the measurements of the Greek vases, bronzes, and so on at the British Museum, that the application of Mr. Hambidge's dynamic theory was conclusively proved.

Sir Richard Paget seconded the vote of thanks, which was heartily accorded, and Mr. Hambidge having responded, the meeting ended.

The famous conservatory of Chatsworth House, which served as a model for the Crystal Palace, is being demolished.

The General Committee has decided to build a War Memorial Hospital at Peterborough at a cost of £75,000, for which Mr. Alan W. Ruddle, A.R.I.B.A., has submitted sketch plans and estimates. A competition for the building has been resolved on.

AERO BLOCK IDEAL COTTAGES.

Many readers have, doubtless, been impressed by their visit to the Ironite Company's stand, No. 85, at the Ideal Home Exhibition, which we briefly described three weeks ago. Those who examined it were, we are sure, convinced that the company's new system of aero block construction, which it is proposed to use in the construction of cottages, has several advantages over ordinary brickwork or monolithic construction. The blocks are comparatively light, while their hollow design renders the internal walls both free from damp and also the "sweating" or condensation with changes of atmospheric temperature, frequently found with solid concrete construction. Moreover, the air enclosed in the hollow spaces acts as a non-conductor, and, compared with solid brickwork or concrete, tends to render the buildings warmer in winter and cooler in summer.

We give an illustration of a group of cottages thus built, in which the vital principle of the system has been successfully employed, and in which the heat isolating properties of air have been scientifically and successfully applied. The aero block has two or more rows of air spaces; these air spaces are so arranged that wherever an imaginary straight line crosses the wall and the plane of the rows of air spaces it must pass through at least one air space. There is in consequence no part of the block not intersected by air spaces from the outer to the inner side of the block.

The special construction of aero blocks, with the large contact faces at the end of the block, allowing them to be reinforced and their joints filled with cement, ensures strength of design. That this is so is abundantly evident from the tests made by Messrs. Fajja and Co., of 6, Earl Street, Westminster, which proved the smaller block to have an average resistance of 37.32 tons per square foot on the net area, and 22.78 tons per square foot on the gross area, the average resistance of the larger block being 36.9 tons net and 21.16 tons gross respectively. When we add that low cost and quick erection are secured, in comparison with other building materials, that durability is guaranteed by the perfect system of air circulation, together with equality of temperature and freedom from damp in all seasons, together with practical incombustibility and consequent low risk for fire insurance, to say nothing of the advantage of being perfectly sound-proof, enough will have

been said to warrant a trial of the system, which can be employed with the additional advantage that where local materials are available all blocks can be made on the site, thus saving all cost of transport.

The merits of "Ironite" as a flooring material, or for waterproofing and oil-proofing walls, reservoirs, roofs, tanks, etc., either alone or with Ironite and cement slurry, which consists of Ironite flooring material mixed dry with Portland cement, and then applied in the form of a thick grout with a brush, are undeniable. One or two coats of this mixture will render the most porous material absolutely waterproof and oilproof against heavy pressure and save the entire cost of rendering. Another method is to use Ironite Waterproofing Brand Cement, which is simply mixed with water only, without any Portland cement, and applied with a brush. Three coats of waterproofing then are necessary.

Floors thus treated resist the heaviest wear without "sanding" or "rutting." They hold no damp after washing, they make no dust, their life is long, and they seldom need repairs. Old floors can be easily repaired by the use of Ironite Flooring, as it forms a perfect bond between old and new concrete.

Any reader as yet unfamiliar with the merits of the above-described specialties should send to Messrs. J. Thornely Mott and Vines, Ltd., 11, Old Queen Street, Westminster, S.W.1, for a copy of their recently-issued booklet, in which all are fully described, and which is illustrated copiously, showing the various types of aero blocks, the clever machine by which they are made, and views of the ideal home built with them, and several picturesque groups of cottages similarly erected.

COMPETITIONS.

ACCINGTON WAR MEMORIAL COMPETITION.—The Competitions Committee desire to call the attention of members and licentiates to the fact that the conditions of this competition are unsatisfactory. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime, members and licentiates are advised to take no part in the competition.

SKIPTON WAR MEMORIAL COMPETITION.—Members of the Society of Architects are requested not to take any part in the above-named competition without first ascertaining from the Society that the conditions have been approved by the Council.

Our Illustrations.

ALTAR-PIECE AND SCREEN, ROE-DEAN SCHOOL CHAPEL, SUSSEX.

The chapel is wholly lined with white statuary marble, sparingly relieved with bands of creasing Sienna. The altar screen of the sanctuary is of same material. The openings are filled with curtains of purple velvet embroidered with gold applique work. The low reredos is of old English oak, slightly gilt, entirely hand-worked, no machine moulding. The frame of the altar-piece is of same material, which corresponds with the altar-rail and gates to sanctuary. The painting, by Mr. J. Watson Nicol, is from a sketch by the late C. W. Cope, R.A., of Christ, as the Church's Intercessor. This drawing, given to-day, was recently exhibited at the Royal Academy. The marble work to the chapel is entirely by J. Whitehead and Son, of Kennington; the woodwork of altar and rails, reredos, and altar-piece, by C. Kerridge, of Cambridge. The architects are Messrs. John W. Simpson, P.R.I.B.A., and Maxwell Ayrton, F.R.I.B.A., of Gray's Inn. We published a general interior view of this chapel, showing the choir stalls and rich plaster ceiling in our issue of June 21, 1907, the date of our illustration of the Junior House School by the same architects. A bird's-eye view of the main buildings of the same big school for girls appeared in *THE BUILDING NEWS* for August 13, 1897, when their erection was commenced.

VILLAGE CROSS, WEST HOATHLY, AND NUTHURST LYCH-GATE, SUSSEX.

We illustrate two war memorials of different types in Sussex designed by Messrs. Sir Ernest George, R.A., and A. B. Yeates, F.R.I.B.A., of 18, Maddox Street, W. In the charming old village of West Hoathly, a position has been chosen where the road sinks below the graveyard, the memorial cross thus rising from the higher level. The local stone has been used. The Lych-Gate, at Nuthurst, near Horsham, forms an entrance to the churchyard. The walls are of the stone in the neighbourhood, and the roof is covered with Sussex stone slates. The names of the fallen will be incised on the walls within the shelter of the roof. Both these sketches were hung in the recent War Memorials Exhibition held at the Royal Academy.

CENOTAPH TO BE ERECTED AT JERUSALEM.

This proposed cenotaph is to be erected at Jerusalem in memory of those of the 60th London Division who fell in the Palestine campaign. It will be placed on the highest point near the City, except the Mount of Olives, and will be clearly seen by all who enter the City from the West.

It was desired that the memorial, which has been designed by Mr. E. Wall-cousins, should be an echo of the Whitehall cenotaph, and should not exceed £1,500 in cost. Therefore, it will be built of honey-coloured native stone, and the abstract representation of Crusaders forming the lower decoration will be expressed in V-shaped channelling and depressed planes. The height will be about 26 ft. on a base 20 ft. x 12 ft. The general surface of the stone will be hammer-dressed with certain portions polished.

SHEET OF OLD FURNITURE.

This Jacobean wardrobe of seventeenth-century date was lately added to the

Victoria and Albert Museum, having been bequeathed by the late Bernard H. Webb, the architect. The splat-back chair is also unusual in detail, and belongs to the South Kensington collection. The two other examples, which need no description, are from different sources.

LEGAL INTELLIGENCE.

THE DOCTOR AND THE DISTRICT SURVEYOR.—Dr. William Hartford, of Bloomsbury Square, W.C., was charged on a warrant at the Bow Street Police Court last Monday with refusing to allow the district surveyor to inspect his premises after his attention had been drawn to their alleged dangerous condition. Mr. Greenwood, for the London County Council, said that the district surveyor, Mr. W. G. Perkins, called at the house on January 31 and asked to inspect the balcony. The defendant replied: "The balcony is all right. The room is occupied. You are too damned interfering." After being served with a summons he appeared to have torn it up and posted the pieces to the surveyor in an unstamped envelope, addressing it to "One Perkins, William George." There was a scurrilous letter enclosed. A warrant for the defendant's arrest was issued after he had twice failed to answer the summons. Police-sergeant Woodhouse, who arrested the doctor, said that on reading the warrant the defendant remarked: "This has all happened because I refused to allow the inspector to enter my house at an unreasonable time, as I had some visitors staying with me. It is the first time in my life I have ever understood that a man is not lord of his own castle." The defendant said that there was a lady ill in the room at the time, but if he had known that the surveyor had any official authority to enter he would have allowed him to do so. He had been put to needless indignity over the matter, owing to the malicious action of the surveyor, who had issued the summons out of spite and revenge. On the defendant's undertaking to allow the surveyor to inspect the balcony, the magistrate again adjourned the case, admitting the defendant to his own bail in £25.

THE BIRMINGHAM FERRO-CONCRETE ROOF COLLAPSE ON JANUARY 23 LAST.—The adjourned inquest on February 11, relative to the death of the five workmen caused by the collapse of a ferro-concrete roof at the rear of premises at Broad Street Corner, Birmingham, was resumed.—Mr. E. H. Harston, Inspector of Factories, was present. Mr. E. W. Cave appeared for Messrs. John Barnsley and Sons; Mr. Finemore for Mr. Cooke (Peacock, Bewlay, and Cooke), the architect; Mr. Evershed, for the Broad Street Chambers, Ltd., the owners of the building; Mr. Leonard Gocher, for the Trussed Concrete Steel Company, Ltd., the designers of the ferro-concrete; Mr. R. A. Willes, for Messrs. Greaves, Bull, and Lakin, cement manufacturers; Mr. Coley, for the relatives of Preece; Mr. J. Willis (R. Nelson Jones), for the relatives of Rouse; Mr. Foster Duggan for the relatives of Wiggall and Gaunt; Mr. J. Cohen, for the relatives of Smith; and Mr. Lyde, for the Birmingham Building Trades Association.—Mr. S. N. Cooke, a member of the firm of Peacock, Bewlay, and Cooke, architects, Colmore Row, said he prepared the general plans for the building. The concrete construction was designed by the Trussed Concrete Steel Co., to whom witness sent an outline plan of the building. The designs and specifications for the concrete work as supplied by them appeared to be satisfactory. Witness advised Messrs. Barnsley to have tests made of the cement, and understood they were carried out. He kept a general supervision over the whole of the work, visiting the job about two days a week.—The Coroner: Did you find anything materially wrong on any of your visits, or did the work appear to be going along to your satisfaction?—Generally speaking, the work was done in an entirely satisfactory manner. On one occasion I was not quite satisfied with the way in which the concrete was being mixed when the concrete-roof was being fixed, and the steel rods of the slabs were slightly out of place. The beams and stanchions, so far as I could see, appeared to be quite right. The displacement of the rods was not of substantial importance.—When you noticed those matters, what did you do?—I instructed the foreman the mixing was evidently wrong, and that more sand was required. I did not consider it necessary to take any of the slabs out.—Did you ever know whether the proportions of materials used for the concrete as laid down in the specification were adhered to or departed from?—When they started the work I know it was adhered to; I know they were mixing it right.—Did you ever hear or get to know in any way that that was being

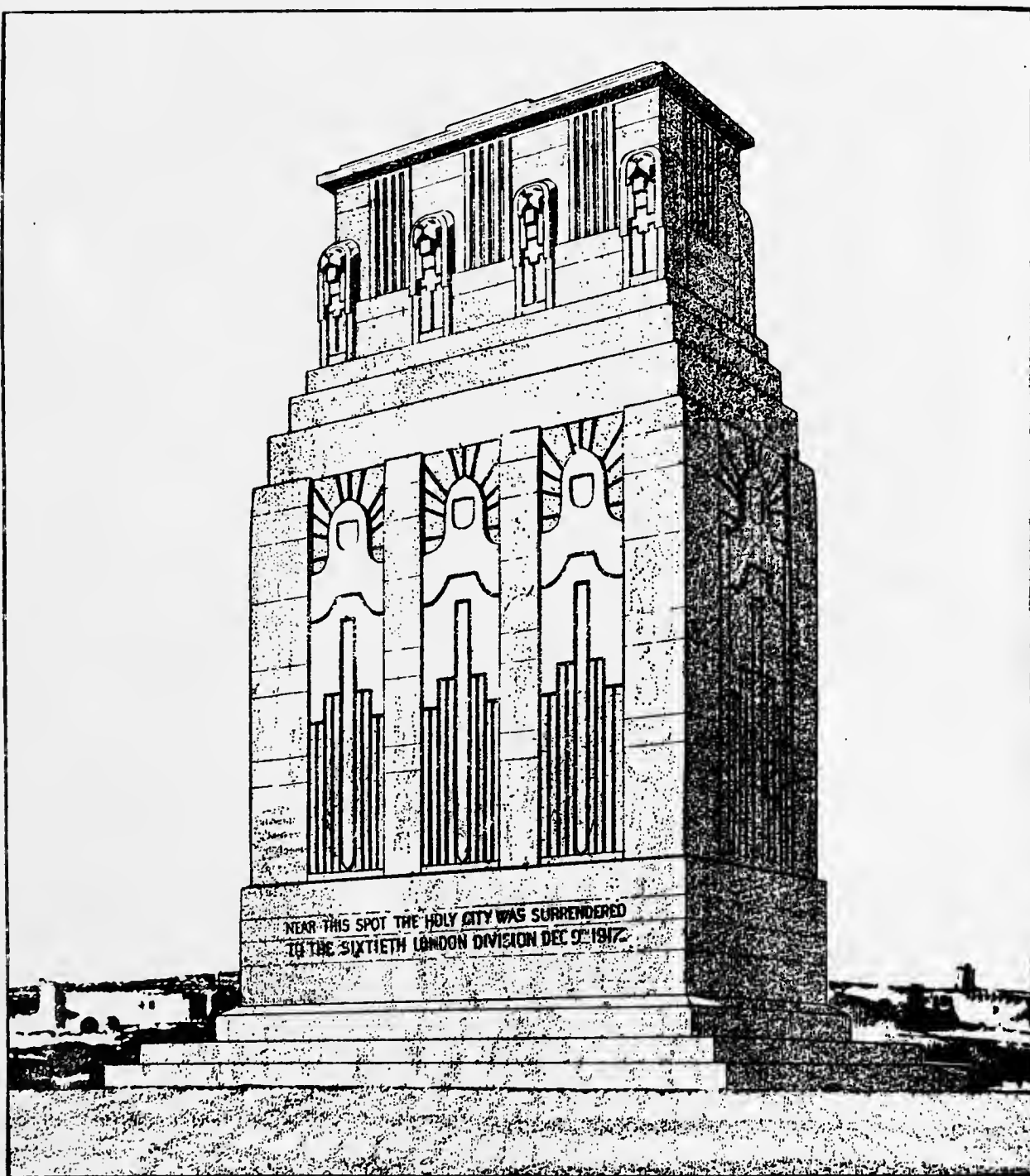
departed from?—No, never. He saw that the mixers started off correctly, but after the commencement did not assume any personal supervision of the preparation of the concrete or the moulding of the slabs. The first lot of concrete was well done, and nothing came to his notice of any deterioration.—Witness was questioned about the erection of brick piers, which, he said, were designed to support the concrete beams over them. They should have been carried right up to the concrete beams, as the plans showed.—The Coroner: We are told by several witnesses that on one side the piers were only built up to within several inches of the beams. Did you see that?—No.—Is not that a point which you might be expected to notice as the architect of the job?—I do not think so. It is a point it would never occur to one to look for. All the other work had been done properly, and this was surrounded by hoardings and props. Without you actually went to look for it, you would never see it.—If you had observed it, should you have regarded it as a matter that should be put right?—I should have asked the foreman why he had not done it, and if he knew the importance of the fact, it would have been all right if he had been careful to prop the beams before he took the soffits away. The removal of the timber moulds was left to the foreman. If he were in any doubt he could appeal to witness.—Moritz Kahn, of Hampstead, London, managing director of the Trussed Concrete Steel Company, Ltd., Kensington, said his firm had for many years specialised in concrete construction. The firm supplied their own forms of steel for reinforcing the concrete work, and also detailed drawings for the execution of the work. They did not undertake complete supervision unless it was specially agreed upon, but if asked for advice they gave it. The concrete was designed on the understanding that the brick piers would assist in supporting it.—The Coroner: If the piers were not built up to full height, would you regard the beams as insufficiently supported?—Certainly.—Mr. Kahn's examination had not concluded when the inquiry was adjourned.—Earlier in the day evidence had been given by witnesses who were principally workmen engaged on the premises at the time of the disaster.—Caleb Robinson, labourer, Farm Street, questioned by Mr. Harston, said that, with exceptions, while they were waiting for material, the concreting was carried on continuously.—Did you take any precautions against frost?—We threw a few bags over the work. He admitted, under further examination, that no special precautions were taken during a period when there were seven degrees of frost, apart from covering the work at night.—James Walford, of Friston Street, who was working on the concrete mixer, said the preparation of the ingredients for the concrete was done by the man Clarke. He used his own judgment as to the time for allowing the concrete to mix—it was generally from 10 to 15 minutes.—Frank Astor Oliver, chemist for Messrs. Greaves, Bull, and Lakin, cement manufacturers, Leamington, spoke to conducting tests of cement in relation to consignments sent to Birmingham. He regarded the commercial quality of it as satisfactory.—The Coroner: Was this any special quality of cement?—No, sir.—By Mr. Willes: The tests were very satisfactory indeed, and indicated very good cement.—The inquiry was not concluded, the Coroner intimating that Mr. Arthur Harrison and Professor Lea would give expert evidence, and that subsequently the cross-examination of Messrs. Barnsley, Cooke, and Kahn (managing director of the Trussed Concrete Steel Company, Ltd.) would take place. The Coroner also stated that the witness named Clarke, whose evidence was very important, would be unable to attend that day, and it would be necessary again to adjourn the inquiry for his attendance.

The Royal Institute of British Architects will hold a general meeting for business on Monday next, at 8 p.m., to receive the Council's nomination of Royal Gold Medallist, 1920, for the election of members, and to discuss a motion by Mr. Sydney Perks.

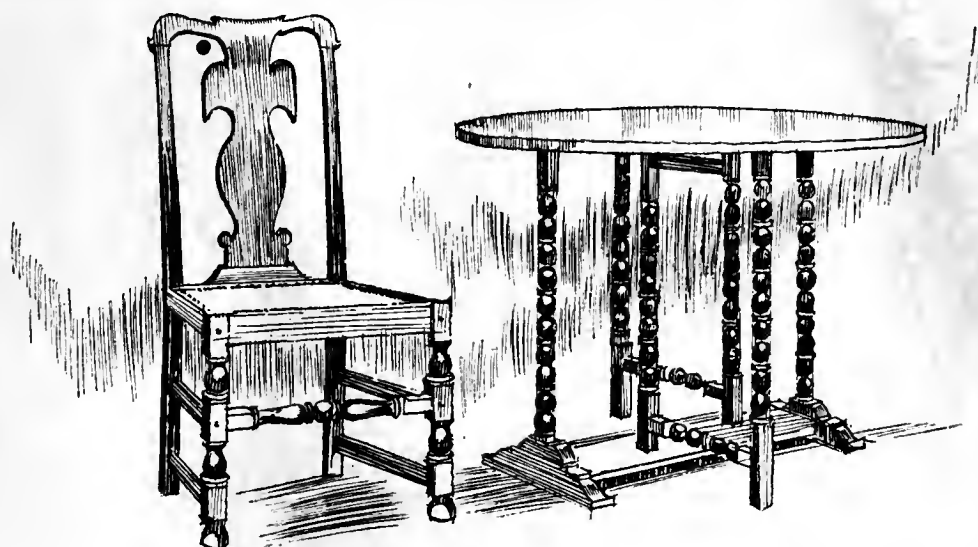
A report on suggestions for the utilisation of the sewage of the metropolis drawn up by the Main Drainage Committee of the London County Council states that unless a method of utilisation of sludge less costly than the existing one and just as efficacious in conveying it in bulk to the sea can be devised there is no justification for altering the system now in operation. In a further report reference is made to a new process, the prolonged aeration of sewage, which produces effluent of excellent quality and an inoffensive sludge, and the committee asks for authority to pay visits of inspection to certain provincial towns, where, it is reported, the system is being operated with success.



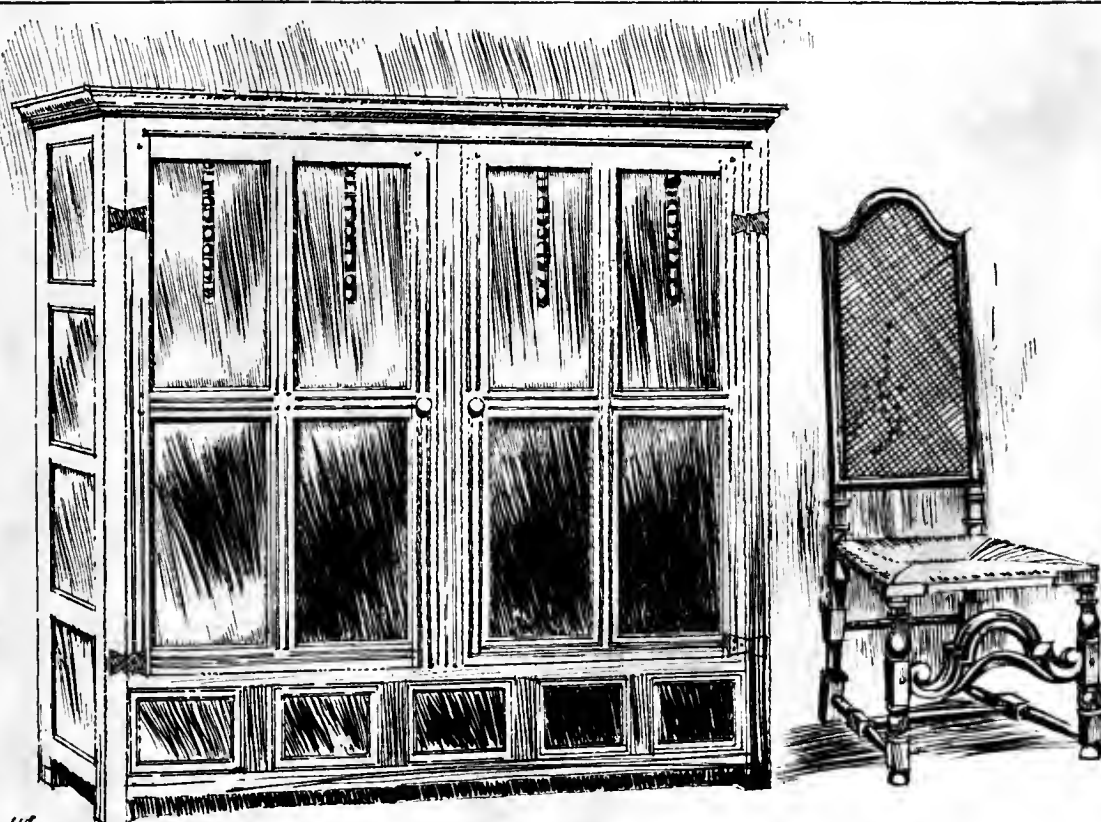
PARISH WAR MEMORIAL, WEST HOATHLY, SUSSEX.
Messrs. Sir Ernest George, R.A., and A. B. Yeates, F.R.I.B.A., Architects.



CENOTAPH TO BE ERECTED AT JERUSALEM.
Mr. E. WALLCOUSINS, Architect.



LATE 17TH CENTY OAK CHAIR & TABLE



W. J. W. 26

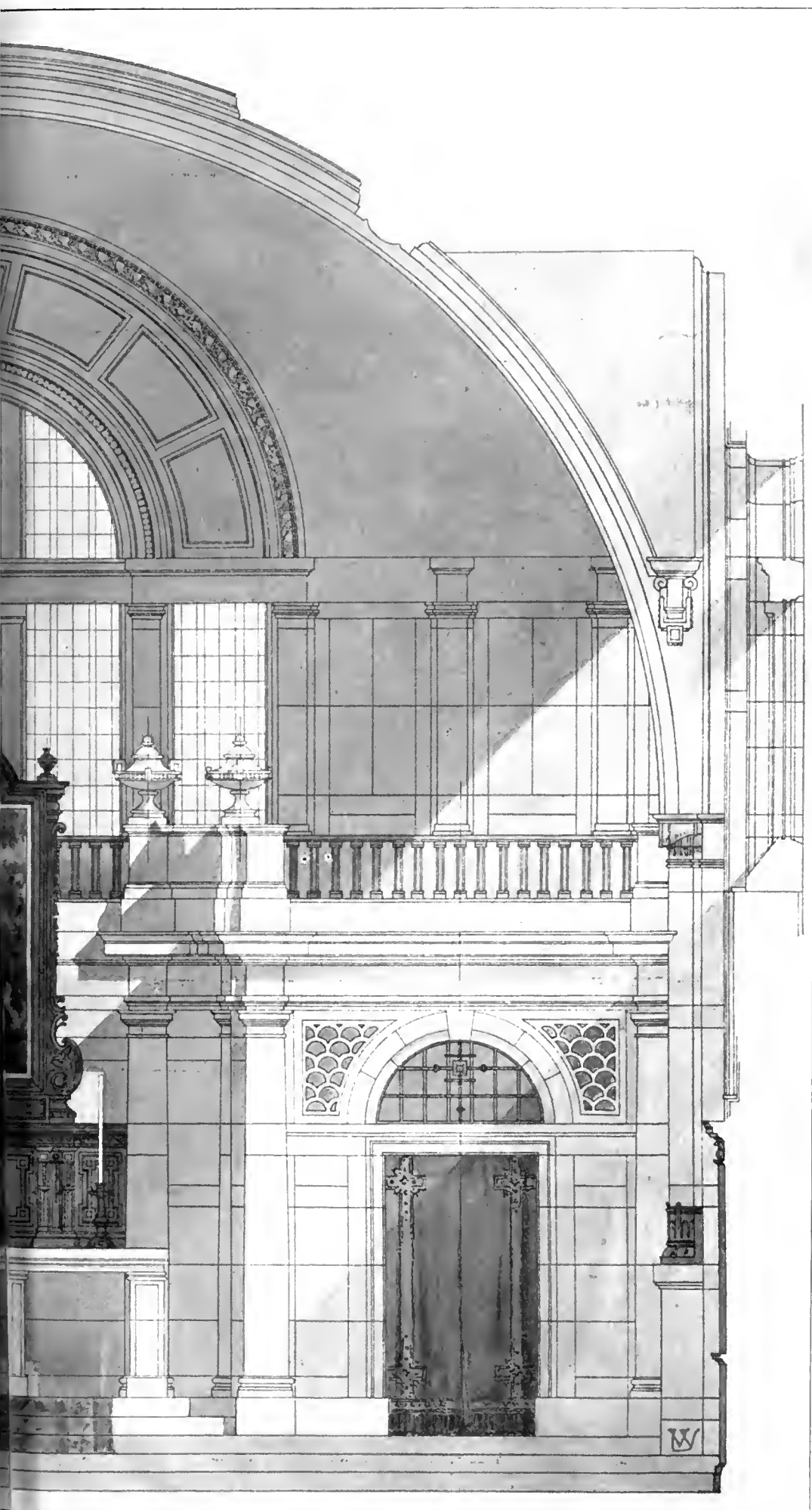
OAK WARDROBE & CHAIR - MIDDLE 17TH CENTY



163-166



ALTAR-PIECE AND SCREEN, R
Messrs. JOHN W. SIMPSON, P.R.I.B.A., and MAXWELL AYRTON



A SCHOOL CHAPEL, SUSSEX.
H.B.A., Architects. Painting by Mr. J. WATSON NICOL.

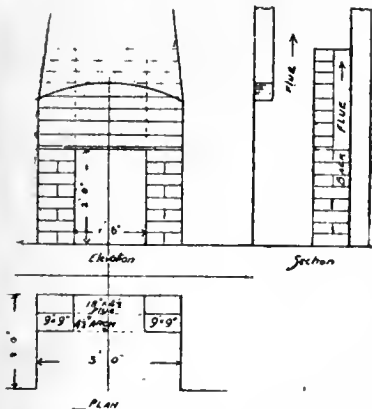


A CURE FOR SMOKY COTTAGE CHIMNEYS.

By D. J. BUCKLEY, M.R.I.A., Mallow.

I have made observations, whilst superintending repairs to labourers' cottages in my district, of smoky chimneys in open-hearth fireplaces worked by fan bellows, and find where the chimney shaft is perpendicular over centre of fireplace opening and the flue built as a hopper, i.e., both sides with a uniform slope to the flue in the shaft, the fire draughts properly. On the other hand, where the flue is built with set-offs, curves, or kinks the cold air of the open fireplace cannot rise rapidly, thereby causing a "smoky chimney."

In all cases I built a "back flue," as shown on drawings, at the back of the recess, 9 in. by 9 in. piers both sides, an aperture



for taking the smoke 18 in. wide and never less than 24 in. high, thus leaving a back flue 18 in. by 4½ in. at the back and as high as the hand can reach above the fireplace arch bar. In some cases I fixed a 9 in. sewer pipe on top of same; even in chronic cases, where the people were almost stifled and in bad health, it always proved satisfactory. The flue should be cleaned, and it is most important that all set-offs, curves, or kinks should be cut out and straightened as much as possible, and a concrete capping 3 in. thick laid on top of the chimneys. The entire work can be done with about 100 bricks in less than a day. The width of the back flue should never be more than 4½ inches.—"The Irish Builder and Engineer."

PROFESSIONAL AND TRADE SOCIETIES.

ARCHITECTS' AND SURVEYORS' ASSISTANTS' PROFESSIONAL UNION.—The following meetings are arranged for March 4; all eligible members are expected to be present. First Anniversary.—London: Caxton Hall, Westminster, 6.45 p.m. (Major H. Barnes, M.P., F.R.I.B.A., and Mr. Norman Wyld, General Secretary, Society of Technical Engineers). Manchester: Milton Hall, Deane-gate, 7.30 p.m. Newcastle: Northern Architectural Association, 6, Higham Place, 7 p.m. Southampton: Morris Hall, Commercial Road, 7 p.m. Norwich: Y.M.C.A. Rooms, St. Giles, 8 p.m. For others see local press. A handicap competition has been arranged. For every recruit a town of under 250,000 population gets, London must get 10, Glasgow, Liverpool, Manchester, Birmingham, Leeds, Sheffield and Bristol 3 each, and other towns over 250,000 2 each, each town drawing from the surrounding district.

INSTITUTE OF ARCHITECTS OF IRELAND.—The annual dinner of the Royal Institute of the Architects of Ireland was held on February 17 at the Bonne Bouch, Dublin. Mr. L. O'Callaghan the newly-elected President, occupied the chair. The President, in proposing the toast of "Our Guests," said he was sorry to say that the architectural profession did not receive the recognition it was entitled to. They must continue asking until they got all they wanted, and until they were put on the same footing as the other professions. The Right Hon. James MacMahon responded to the toast, and also Mr. J.B. Story, President of the Royal College of Surgeons.

Colonel Crozier, in responding, paid an eloquent tribute to Mr. Kaye-Parry, an ex-president, and also present president, whose services would never be forgotten. "The Royal Institute of Architects" was proposed by Mr. P. H. McCarthy, President of the Institution of Civil Engineers, who said that the close co-operation between the two bodies was to the advantage of both. Mr. Kaye-Parry, responding, said that they should keep the work of reconstruction in the hands of qualified men of their own profession in Ireland. The toast of "The President" was proposed by Mr. R. C. Orpen, and briefly acknowledged by the President. The toasts of the Hon. Secretary and Hon. Treasurer (Mr. Allberry and Mr. Sheridan) were also honoured.

THE SURVEYORS' INSTITUTION.—Mr. Howard Martin, Past President, has accepted office as the first official arbitrator appointed by the Reference Committee under Section 1 of the Acquisition of Land (Assessment of Compensation) Act, 1919. It is understood that appointments for Scotland and Ireland may shortly be announced, but the further appointments for England and Wales may be deferred until it is possible to estimate with greater accuracy the amount of the work which will devolve upon the arbitrators. The award of the examiners in connection with the recent examination for the Institution Scholarships, which is carried out by the Oxford and Cambridge Schools Examination Board on behalf of the Institution, has now been received. Only three candidates attained the standard required of scholarship holders, and the vacant scholarships, therefore, will be offered to undergraduates already in residence who propose to enter one or other branch of the profession, and who are supported by the University authorities as showing exceptional ability. The three successful candidates are:—Mr. E. Gee, Beckington, Bath; Mr. D. C. Buckley, 11, Home-field Road, Wimbledon, S.W.19; and Mr. G. J. Gorman, School House, Rugby. The Council of the Institution has had under consideration the Great Northern Railway Bill, which embodies certain principles which are new to private legislation. In particular, Clause 31 provides that cases of disputed compensation shall be heard by a single arbitrator, who, in the absence of agreement, shall be appointed by the Minister of Transport. It is also proposed to give additional powers to arbitrators with regard to the award of costs.

NOTTINGHAM AND DERBY ARCHITECTURAL SOCIETY.—The President and a large number of Nottingham members attended the first meeting of this society, held in Derby on February 19. They were met by the Derby members at the Oriental Café, where Mr. A. Eaton, Vice-President, entertained them to tea. After suitable thanks had been accorded Mr. Eaton for his hospitality, a general meeting was held, at which a new member and an associate were elected. Other business having been disposed of, an adjournment was made to the Technical College, where Mr. W. Haywood, of Birmingham, Fellow of the Royal Institute and University Lecturer on Civic Design, read a paper on "The Spirit of Cities" to a large audience. The Mayor of Derby, Mr. A. J. Eggleston, presided. After an analysis of the mental and moral effect of environment, the adventurous manipulation of modern commercialism in America, and the wonderful outcrop of beauty which followed upon trading development in the thirteenth century Italian cities; the lecturer said that the latter put us to shame by the noble use they made of commercial success. They had the wisdom to know that their wealth was of little value except it contributed to the satisfaction of cultured minds, and the treasures of art which they lavished upon their buildings and public places were of an excellence which it is our ambition to shut up in museums, not, unfortunately, as stimulating examples for the treatment of our own public places, but as things to marvel at, and as things beyond emulation. The point to which our greatest energies should be directed is not the enjoyment of what others have accomplished, not the preservation of the wonders of our forefathers, but the finest

expression of our own activities. The preservation of art treasures is an act of commonsense—that, of course, we shall do; but the production of an art which is an interpretation of our own vital forces, that is a work which leads to undreamed of wonders. Industrial energy and its equipments have great potential beauty, and in time we shall, no doubt, find a way to properly display the grandeur of the immense activities of our ports, and of those towering cooling towers and power stations of our period, which in proper hands could so easily be made to express their wonders. Some, indeed, are already completely successful, but, like a masterpiece of painting in a lumber-room, have nothing to set them in value. Surround them with lawns, place them in some sort of relation to their neighbourhood, and set up a description in plain terms, giving their function and capacity, and the people will flock to them as readily as to any other marvel. Let the management arrange for conducted parties to see the operation in progress, and you will have a new educational process and an advertising medium at little or no cost. The lecturer illustrated his remarks with a number of interesting views of ancient buildings in Rome and Greece, also showing slides of modern cities and the latest developments of American sky-scrapers, and in conclusion suggested that in every city the dominant trend of its energies could be symbolised and set up as a central monument to emphasise the pivotal thought around which the "Spirit of the City" revolved. Mr. Haywood was heartily thanked for his most interesting lecture, and the Mayor of Derby for presiding.

ULSTER SOCIETY OF ARCHITECTS.—The annual general meeting was held in Belfast on February 18; 1920. Mr. N. Fitzsimons, (President) occupying the chair. The Secretary read the report of the Council, which set forth the useful work done by the society during the war period, and since the termination of the hostilities, the society having co-operated with the Corporation in connection with the Housing of the Working Classes (Ireland) Act, and with the Library and Technical Committee in connection with the formation of the Architectural Course at the Technical Institute. The following were elected officers of the society for 1920:—President, Mr. T. W. Henry; Vice-President, Mr. R. I. Calwell; Hon. Treasurer, Mr. W. C. Maxwell, Hon. Secretary, Mr. E. R. Kennedy, Council, Messrs. R. M. Young, N. Fitzsimons, R. E. Buchanan, J. J. McDonnell, J. St. J. Phillips. Associated Members of Council, Messrs. R. H. Gibson and Jackson Smith. Hon. Auditors, Messrs. J. A. Hanna and J. Seeds. Secretary, Mr. J. A. Johnston, 8, Ocean Buildings, Belfast.

OBITUARY.

We regret to record the death of Mr. Philip Coldwell Thicknesse, F.R.I.B.A., of pneumonia following on a chill, at his residence, The Cottage, Eastham. He was a member of the firm of Messrs. Willink and Thicknesse, of Liverpool, by whom many notable buildings were designed. The Cunard buildings, in which the firm had their offices, is one of the latest additions to local architecture which they had planned. It was to Messrs. Willink and Thicknesse that the designing of Harrods' proposed stores on the St. Peter's Church site was entrusted. In the year 1904-5, Mr. Thicknesse was the President of the Liverpool Architectural Society. The deceased gentleman was the third son of Bishop Thicknesse, of Peterborough, and in 1901 married Margaret, the daughter of the Rev. John Oakley, a former Dean of Manchester.

Sir A. Geddes, replying last Monday to Mr. Gilbert (Southwark, Central, C.L.), said: The Home-grown Timber Department is being wound up as rapidly as possible. There are still about 6,500 workpeople, sawyers, fellers, etc., on its pay roll. It is not possible to quote a figure indicating its annual costs as its expenses diminish month by month as undertakings are cleared up or disposed of. Its sales last year approximated in value to £3,790,000.

Our Office Table.

"General Conditions in Electrical and Other Engineering Contracts," by William Smith Kennedy, LL.B., Barrister-at-Law (London: Sweet and Maxwell, 3, Chancery Lane, 12s. 6d. net) in the absence, as yet, of any authoritative Model Clauses for the guidance of engineers and contractors, this book should prove useful to all concerned. Quite possibly, as Sir Alex. B. W. Kennedy, LL.D., F.R.S., says, in his pithy introduction, some of the model clauses may be capable of improvement, but we think with him that they are at any rate better than any we have yet seen, and that the notes upon them, which cover comments on many other clauses which have been used, call attention to points not very obvious, but often weighty and sometimes misunderstood. In our own profession we not infrequently meet with fancy variants inserted capriciously, and not seldom in such direct contradiction of common law, and still less infrequently with the result that a contractor may be compelled to carry out work which he knows will be defective and yet be held responsible for the defects, that we hope this volume will be read by all architects and builders as well as by those to whom it is more directly addressed.

The National Federation of Building Trades Operatives has just issued a report up to the end of the year 1918. There were then sixteen societies affiliated to the Federation, paying on a total membership of 326,486. This does not represent the whole membership of the societies concerned, but only that part which is engaged in the building industry. Thus, the Amalgamated Society of Carpenters, Cabinetmakers, and Joiners, which has a total membership of 140,000, pays on 89,000, the balance being engaged in other industries, such as shipbuilding. Nor does this figure of 326,000 represent the total number of trade unionists in the building industry; for of the eight or ten Scottish building trade unions only one, the Scottish Painters' Society, is affiliated to the Federation, and such unions as the heating engineers and electricians are not included. The Federation has been threatened with the secession of its largest members, the A.S.C.C. and S., which refuses to pay increased levies unless it secured increased representation on account of its size. The problem of amalgamation is being dealt with by the promoting within the Federation of movements for the amalgamation of kindred societies.

Speaking at the last meeting of the Norwich City Council, Mr. Witard said there was no need to raise money by a loan for housing purposes. The Government could easily raise £150,000,000 in six years by a direct levy upon capital or a tax upon war wealth. If the money thus raised was lent free of interest houses could be built on the present plans and let at 3s. a week, plus rates, and a profit would be made on the transaction. The Government would not do this because it was interested in philanthropy at 8 per cent., but Mr. Austen Chamberlain would not always be Chancellor of the Exchequer, and when a change came it would probably be found that these claims would be put into operation somewhat on the lines he had suggested. The scheme was being held up by the money trust. The money trust was encouraging the building trust and the other trusts to strangle the people. He strongly opposed the building of any houses smaller than those already approved of. They did not want little brick boxes for the people, but proper house accommodation.

Sir Charles T. Ruthen, O.B.E., F.R.I.B.A., has placed his resignation as Chief Inspector to the War Cabinet Committee on Accommodation and Deputy Controller of Accommodation for London Area in the hands of the First Commissioner of Works. Sir Charles, at the request of H.M. First Commissioner of Works, in conjunction with Sir Leonard Powell, J.P., undertook in January, 1917, "to inspect and report upon the use made by Government Departments of their office accommodation." The success of this new

office was considered so great that in January, 1918, Sir Charles was appointed chief inspector, and the inspectorate was enlarged. The chief inspector was at the same time also appointed Deputy Controller of Accommodation for the entire London area. H.M. First Commissioner of Works (Sir Alfred Mond, Bart., M.P.), in accepting Sir Charles Ruthen's resignation of these honorary appointments, states that he does so with the greatest regret, and places on record his "sincere appreciation of the great services to the country in this work of accommodation." Sir Alfred Mond further states, in writing to Sir Charles Ruthen: "The excellent results achieved have more than justified my confidence in you when I invited you to accept these positions. I am proud to think that in this section of my administrative work I have been able to avail myself of your able services, and, despite the enormous difficulties, that we have achieved some sound and practical results. I thank you most sincerely for all you have done." The First Commissioner, considering that "the work of the Cabinet Committee on Accommodation would be seriously handicapped if Sir Charles Ruthen were to sever his connection entirely with the department," has appointed Sir Charles Ruthen consulting chief inspector, in order that the Committee in any difficult circumstances may avail itself of his valuable services.

Three useful text-books, each in their way, reach us from Messrs. Jas. Selwyn and Co., 20, Essex Street, W.2. The first, price 1s. 6d., is "Five Figure Logarithms and Trigonometrical Functions," by W. E. Domett and N. C. Hird, an inexpensive book of five-figure tables sufficient to meet the needs of technical students, draughtsmen, and others. The second, by the same authors, is "Mathematical Tables," comprising, with Vol. I. and Vol. III., a complete set of data for engineers, work managers, and the like. The third is "Detail Design in Reinforced Concrete," by R. S. Andrews. Prices of the last two books are not stated.

At last Tuesday's meeting of the London County Council the Chairman of the Improvements Committee, Mr. Granville Smith, replying to questions put to Mr. J. D. Gilbert, M.P., as to the suggested rebuilding of Charing Cross railway bridge as a War Memorial, said the Council's chief engineer had submitted certain plans and material, which members of the Royal Institute of British Architects and of the London Society had been invited to inspect. The Council's attitude had been that the railway company should not be permitted to carry out extensive works to the existing bridge until the authorities and the bodies interested had had an opportunity of considering schemes for the improvement of the area occupied by Charing Cross Station and the bridge. Up to the present time the Council had not committed itself to any particular scheme. Mr. W. C. Johnson urged the necessity of something being done before August, after which, it was understood, the company would be in a position to proceed with the work.

In an Interim Report, issued by the committee appointed by the Food Controller to inquire into the adequacy and efficiency of the London wholesale food markets, Billingsgate and Covent Garden are unanimously condemned. Smithfield and the Central Meat Markets, under the control of the City Corporation, are considered to be suitable and convenient. The committee have hardly a good word to say about either Covent Garden or Billingsgate markets, which they declare could hardly have supplied the wants of a medieval London, far less a London of the twentieth century. They condemn the utter lack of management and organisation at the two latter markets. It is understood that recommendations as to the lines on which future market management should proceed will be made by the committee in its final report.

A congress de l'habitation and de la construction is organised under the auspices of the Town and Market Committee of Lyons, and will be held from March 10 to

14 next, under the patronage of Messieurs Le Troquer, Ministre des Travaux Publics et Breton, Ministre de l'Hygiène and of the Prévoyance Sociale. The Ministre des Travaux Publics of Belgium will be officially represented, and Messieurs Villemain, Président de la Fédération Nationale des Travaux Publics et Délégué de l'Office National du Bâtiment area, and Monsieur Georges Hersent, the eminent engineer, will be present. Among the speakers will be Monsieur Augustin Rey, the well-known architect, who will preside over a grand conference on "La France Sans Logements, L'Avenir Hygienique De La France, and Le Plan D'Extension Des Agglomérations." Monsieur Charles Abella, architect, Prix de Rome, will speak on the organisation of modern cities and the transformation of ancient cities. Monsieur Georges Benoit Levy, Secretary of the Société des Jardins de France, will preside over a conference on the Propagande de l'Hygiène Sociale. Monsieur Couibes, Président of the Fédération des Fabricants de Chaux et Ciments, will discuss hydraulic agglomerates and their uses. Monsieur Deveraux, Architecte diplômé, will discuss "Zones de Construction." Reports have been sent in by Messieurs Valet, engineer, Roche, Ingénieur à Voiron Société des Habitations à Bon Marché d'Oyonnax; by the Société des Habitations hygiéniques de Lyon Vaise; by M. Boileau, engineer, Lauréat de l'Institut à Nice; M. Daldest, architect, of Marseilles; by M. Paul Jaubert, architect, of Marseilles; and by M. Fernand Ducros, secrétaire Général du Syndicat des Industries du Bâtiment des Bouches du Rhône. All communications from intending participators and visitors should be addressed to the Office Central de la Construction et de l'Habitation, Hôtel de Ville, Lyons.

The Government has appointed a Committee "to consider the operation of the Rent Restriction Acts, and to advise what steps should be taken to extend, continue or amend these Acts." The Committee consists of:—The Marquess of Salisbury, K.G. (Chairman); His Honour Judge Sir Edward Bray; Mr. E. Hallas, M.P.; Sir Aubrey Symonds, K.C.B. (Ministry of Health); and Mr. P. B. Moodie (Scottish Office). Mr. H. C. Talbot, of the Ministry of Health, has been appointed Secretary to the Committee. Communications on matters concerning the Committee should be addressed to the Secretary, Rent Restriction Acts Committee, Ministry of Health, Whitehall, London, S.W.1. All very good men, no doubt, but not a single architect or surveyor to assist with expert experience or advice!

Sir Kingsley Wood, M.P., Parliamentary private secretary to the Minister of Health, in an interview with a Press representative stated that if the shortage of labour in the building trade were not speedily remedied there would be a complete stoppage of Government house building in all parts of the country.

The Council of the Royal Institute of British Architects have been informed that the official scale of fees has proved to be inadequate in many cases in which housing schemes are being undertaken on widely scattered sites in rural districts. If any members are able to afford information bearing on this point, the Council would be glad to receive it for consideration. Particulars should be addressed to the Secretary, R.I.B.A., 9, Conduit Street, W.1.

Four War Memorials are about to be placed in the church of St. Olave, Hart Street. One, to commemorate the sacrifice of parishioners who fell, has been designed by Sir William Goscombe John, R.A., and will be of bronze, surmounted by a figure of Britannia blessing the fallen. Trinity House is giving a stained glass window in memory of its fallen, and this will be placed in the east window of the south aisle. In the east window of the north aisle will be a stained glass memorial, presented by Mr. F. H. D. Man, of Mining Lane, in memory of his son, Lieut. Frederick Man, who died while on service. In another part of the north aisle will be a stained glass window in memory of Lieut. Arthur Kerr, the son of Mr. D. O. Kerr.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House.

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OUR ILLUSTRATIONS.

St. Paul's Cathedral, London. West front and plan of the Church. Royal Institute of British

Architects' Silver Medal measured drawings, 1920, by Mr. Arthur F. E. Polcy.
The Exhibition Hall, Australia House, London, W.C. Messrs. A. Marshall Mackenzie, LL.D., A.R.S.A., and A. G. R. Mackenzie, F.R.I.B.A., Architects.
Churchyard Gate, Holme-on-Spalding-Moor, Yorkshire. Messrs. Temple Moore and Moore, F.R.I.B.A., Architects.

Currente Calamo.

As announced on another page, the Council of the R.I.B.A. has nominated a distinguished French architect this year for the Royal Gold Medal. The selection is in every way a happy one, and we believe it has been arrived at by the help of the intimate knowledge of French architects and French architecture possessed by the President, Mr. J. W. Simpson. If so, it is not the least of the services he has rendered to his confrères and to British architecture, and, more or less directly, to the peace of the world, which, in our opinion, is most likely to be preserved by the continuance of the cordial relations between ourselves and the great French people. They and we together bore the brunt of the great struggle with the myrmidons of a vulgar despotism that sought to engulf every free nation. The more intimately our fraternal relations can be knitted still closer and closer, the more will the arts flourish, and the sooner will prosperity relieve humanity from the burden it has had to shoulder in defence of freedom. We take the opportunity of expressing our gladness that Mr. Perks's timely motion was carried on Monday night. Those who claim participation in the direction of all such bodies as the R.I.B.A. should know better than to show their zeal by their absence from its Council meetings.

Those priceless words "alternative accommodation available" are, as we foretold, having a long and profitable run in the Courts. Both Bench and Bar are doing their best to prove they may mean anything or nothing. The latest "very interesting and important case" of "Smith v. Bridgen" puts quite a new face on the problem. It came up to the High Court on appeal from Birmingham justices, who, having to deal with a summons under the old Small Tenements Recovery Act, 1838, by the light of the latest Increase of Rent, etc., Act, 1919, took a good solid view of their duty. After holding that the landlady "reasonably required" the premises for her own occupation, they "considered" all the circumstances, and then decided that they were

not bound by law to see that any "alternative accommodation" was available for the tenant, and so made an order for possession against him under the ancient statute. The tenant appealed to the High Court, where three judges agreed in holding that they were quite right. It was argued for the appellant that the justices had no jurisdiction to make an eviction order unless the landlord proved that there was alternative accommodation available for the tenant. But the Court ruled that this was not so; the justices had only to "consider" all the circumstances as they had done; the landlord wisely gave no evidence; the tenant only showed she could not get what she thought suitable in the locality; the Court then said there must be alternative accommodation somewhere in the country, and left it at that! There seems to be some grit in justices' justice, after all, and the legal meaning of these magic words is now more misty than ever.

The International Building Trades Exhibition opens at Olympia on April 10 and remains open till April 24. It is of little use to exhibitors to devote our space to notices of their exhibits in our issues published at the end of the first and second weeks of the exhibition, and we do our best, therefore, to indicate in the number published the week previous what our friends will show. We shall, therefore, be glad if exhibitors send us as early as possible brief particulars of their intended exhibit, and the number of their stand, that we may include them in our notice which will appear in our issue of April 9. If they are not regular advertisers with us we should be glad to reserve space for them in our three issues of April 2, 9 and 16, if possible, for a special advertisement of their specialities. The terms are £8 8s. per page per insertion; half a page, £4 10s. per insertion; quarter page, £2 10s. per insertion. Smaller advertisements, seven shillings per inch per insertion. Particulars of exhibits and advertisements should be sent to the Manager of the "Building News," at the offices, Effingham House, 1, Arundel Street, Strand, London, W.C.2. Remittances for advertisements should be made payable by cheque or P.O.O. payable to The Strand Newspaper Co., Ltd., and crossed on the London and West-

minster and Parr's Bank. We cannot guarantee insertion unless sent early, as our present space is very limited.

The prospectus which appears on another page of Eastwoods, Limited, with a capital of 300,000 £1 shares, of which 260,000 are offered to the public at par, is a decidedly attractive one. No firm of its kind has so satisfactory a history, or is better known, and none embraces so many profitable lines of business. Some of us must still have pleasant memories of the brother partners who founded the firm, and in the earlier and middle years of the last century maintained its naturally more limited scope but always solid prosperity. Many more have been advantaged by its later developments, and remarked its carts and waggons, with their splendid horses—the spring parades of which in Battersea Park attracted crowds of admirers in pre-war days. Nor will the daily addition to the picturesque features of the Thames, of its big fleet of barges, bearing to its wharves and depôts the produce of its numerous and inexhaustible brickfields, have been forgotten. With the assured continuance of the same enterprise guaranteed by the present directorate, the solid value of the assets and the facilities of transport and carriage which the company enjoys should ensure a profitable return—especially just now, when its leading specialities are in such urgent demand, and should attract the participation as shareholders, not merely of the ordinary investing public, but to no small extent of that of our own readers, who will find it to their interest to establish more intimate relations with a concern which even if the old keen, competitive days return, will, as in the past, be able to do business at a satisfactory profit when many others may have to shut down.

A trenchantly written pamphlet on the housing question here and in the United States, by Mr. W. T. Miller, the President of the well-known F. W. Dodge Company, of 119, W. 40th Street, New York, has reached us, in which the two policies of housing in this country and the United States are contrasted, quite truly, to our own disadvantage. It is our own opinion that, as contended by Mr. Miller, a nation which subsi-

dises its tenants increases its tenantry and decreases its housing. The housing policy of England since 1851 has been to subsidise the tenant. On December 16, 1919, English legislation was formulated to subsidise the builder. Both policies were prompted by philanthropic motives. Both kill private enterprise. Both fail in making private ownership of homes possible. The so-called "unearned increment" is the incentive to investment of savings in homes and real estate. It is chiefly through the hope of enjoying the unearned increment of property that the latent energy of the citizen may be called forth. Since 1841 the United States has, in its land laws, recognised this great incentive. It has stimulated the building of rural homes through the wide distribution of land under the Homestead Acts. Its policy has been to enable the prospective home owner to acquire property, mainly through labour. Here we are still face to face with the fact—visible enough to all but the Feeble-Minded and Ready-to-Halts of this Government, that during the past hundred years the collective effort of individual initiative has built more houses than all the schemes of subsidies and loans and rent regulations.

An interesting note in the *Kansas City Star* calls attention to the "first native American who entered on the study of architecture and engineering in the United States," but "who for sixty-three years has lain in an unmarked grave, No. III., in an obscure cemetery in the capital of the nation he served, utterly forgotten, even by the men of his own profession. He has been almost completely ignored in American history, and his name scarcely appears in American reference works." While Mill's early work placed him in the front rank of the architects of his day—it was not until he was past fifty that he developed his full talents and earned his pre-eminent position in American architecture. The patent office, the treasury building, the old post-office, and the Washington monument are four structures upon which his fame must finally rest, but for which his design, though accepted in 1833, was not completed until 1878. Born at Charleston, S.C., in 1781, he died in 1855. At the age of 19 he entered the office of James Hoban in Washington, a Charleston architect who was just finishing the White House. He early met Thomas Jefferson, who was greatly attached to him. In 1802 he made a tour of the country with letters of introduction from Jefferson. On his return to Washington Mr. Jefferson gave him the run of his library, lent him architectural works and entertained him on his estate at Monticello. This visit is said to have lasted two years, in the course of which he made the general drawing for the Jefferson mansion. It was from South Carolina that Mills won the award in competition for the design for the Bunker Hill monument, the corner-stone of which was laid by Lafayette in 1825. Mills' first independent practice was in Philadelphia, about 1810, where he had charge of the

restoration of Independence Hall and designed two fireproof wings. While in Philadelphia, Mills, in a competition, won a \$500 prize and the design for the first monument erected to Washington, that at Baltimore. From Philadelphia Mills returned to Charleston, where he remained ten years as a member of the South Carolina board of public works. In 1830 he went to Washington at the invitation of President Andrew Jackson, who appointed him architect of public buildings in 1836. That office he held until 1851, when he retired from the office and from practice, at the age of 70.

Prizes aggregating 6,000 dols. have been offered by Vincent Astor, Alfred E. Marling, President of the Chamber of Commerce, and the New York Foundation in a competition having for its purpose the ultimate destruction of all the slums in New York City. The New York State Reconstruction Commission announced that this means had been taken of stimulating the architects and builders of the city to devise means to remove the conditions which had been revealed in the survey of the congested quarters conducted by the commission last spring. According to Clarence S. Stein, secretary of the Housing Committee of the Reconstruction Commission, there are more than 400,000 apartments in "old-law" tenements, the dwelling-places of 2,000,000 New Yorkers, which are not fit to be called homes. The building of 400,000 homes would be a colossal task at a time when new walls were never so expensive. The problem is to use the old shell and make it into a well-planned, sanitary, light place, fit for habitation. Large-scale plans have been drawn of a characteristic block on the lower east side, showing every wall, door, window, plumbing fixture, court shaft and yard. The competitors are to make drawings showing how this block may be altered to bring it up to present-day standards. A primary condition of the contest is that such alterations must be commercially possible. The contestants must prove to the landlords that the rebuilt houses will more than repay the cost of repairs in decreased number of vacancies and the returns which will be paid willingly for better accommodation. There will be eleven prizes, including two firsts of equal value.

Peace for the flat-dweller at last! The baby below him has whooping cough; the man above him has a pianola; and both tune up about bedtime. But Hiram Percy Maxim, the well-known American inventor of the silencer for firearms, has come to the rescue. He would build flats, hospitals, and hotels so that the windows need never be opened. Air is furnished from the roof through a main duct and several branching flues. On top of the main duct there is a silencer that breaks up the noise waves in the air which is entering. As it goes into the silencer it passes through a series of spirals which are enclosed in an inside chamber made of sound-deadening material. By the time the air finally reaches the main duct all

the noise has been taken out of it. In the duct there is a fan for forcing the air down and a coil for heating or cooling. In winter the coil is filled with steam and in summer it is filled with a refrigerant. The fresh-air openings are near the ceilings of the rooms, and the flues for carrying off the foul, used air near the floor.

THE "WELFARE" ASPECT OF GOOD LIGHTING.

It is the fashion to speak and write though the desire for more money and shorter hours were the only basis of Labour dissatisfaction. Of course, workers want as much money as they can get, but it will be found by anyone who cares to seek for the first causes that industrial unrest in many cases originates in a feeling of resentment at uncomfortable, unhygienic or dangerous working conditions. In the end, this ferment of discontent crystallises in the demand for higher wages, but in the first instance it is a matter of money than of moral. If to be true the granting of higher wages can never have more than a palliative effect in the healing of labour disputes, unless the wage increase be accompanied by a wholehearted effort to improve working conditions up to the highest possible standard.

It will hardly be disputed that, among the many factors contributing to the comfort of workers, artificial lighting plays a most important part. In a previous article the effect of good lighting on productive efficiency was discussed, and it is evident that any increase in output arising from improved illumination is due not only to the fact that the workers are able to see better, but also to the enhanced comfort and safety of the working conditions.

ACCIDENT PREVENTION.

Investigations, both in this country and America, have demonstrated the close relation which exists between lighting and the accident rate. This question was required into by the Departmental Committee on Lighting in Factories and Workshops, which reported in 1915. Industrial accidents occurring during 1913 and 1914 were classified and tabulated according to the nature of accident, industry, period of year, and whether under daylight or artificial light. The tabulation is too long for reproduction here, but the results may be summarised. Of course the number of the accidents covered by investigation had little or nothing to do with lighting. There is, however, a class of accidents which is obviously related very closely to the question of illumination, and that is accidents due to falls or stumbles. This type of accident for the year 1914 amounted to 30 per cent. of the total industrial fatalities.

In the industries investigated by the Departmental Committee it was found that the total accidents, fatal and non-fatal, due to people falling, were 8,581 in the summer months and 11,972 for the winter months of 1913 and 1914. Analysing these figures on the basis of the average number of hours worked under daylight and artificial light respectively, it was found that the daylight accident rate per hour was 7.16, while the artificial light rate per hour was 12.32, an increase of 71 per cent. over the daylight rate. A similar analysis of the total accidents from all causes showed a daylight rate of 61.27 and an artificial light rate of 79. In this case the artificial light rate is 29 per cent. greater than the daylight figures. This is

natural, since a large number of these accidents were totally unrelated to lighting.

It is a fair inference that the difference between the daylight and artificial-light accident rate is due to poor artificial lighting, and that if this could be improved up to the average standard of daylight illumination the tragic discrepancy would disappear.

The Home Office Departmental Committee made (inter alia) the following general recommendations: There should be statutory provision (a) requiring adequate and suitable lighting in general terms in every part of a factory or workshop, and (b) giving power to the Secretary of State to make orders defining adequate and suitable lighting for factories and workshops, or for any parts thereof, or for any processes carried on therein. These recommendations have not yet been given legal effect, but undoubtedly there will be legislation on these lines within the next year or so.

In America the question of industrial lighting has also been investigated, and with very similar results in respect of daylight and artificial-light accident rates. According to one writer (Mr. F. H. Bernhard) it is estimated that 75 men lose their lives every day owing to bad lighting in American plants. To quote Mr. Bernhard: "On this score it is not surprising that six States have in recent years enacted factory lighting codes laying down requirements as to lighting to safeguard the lives, limbs and eyes of factory employees. Several other States have pending the drafting of similar codes. All these codes are based primarily on the promotion of safety; their specified lighting intensities do not concern themselves with the stimulation of production, since the State cannot compel a manufacturer to be so progressive as to look out for his own best interests. It can compel him, however, to equip the plant with such safeguards, including lighting, as will remove the manifest hazards to his employees."

LIGHTING FOR SAFETY.

As to the characteristics of safe lighting, they can be summed up in the statement that the form of artificial lighting which helps production must also be the safest. In dealing with the productive aspect of illumination in a previous article, the main desiderata of good lighting were outlined, and a brief description was given of the methods which in certain factories had resulted in increases in output of from 10 to 30 per cent. The idea behind the schemes was to simulate good daylight as far as was economically possible in regard to intensity and distribution of light. High candle-power half-watt-type electric lamps in suitable reflectors or semi-indirect bowls were suspended at a considerable height from the floor (in one case as high as 30 ft.). These units were spaced so as to give a uniform general illumination of high intensity over the working area, while the high suspension and enclosure of the lamps ensured a complete absence of glare and specular reflection.

Such a system as this must tend to safeguard the lives and limbs of the workers, because by its aid all operations can be carried on as easily and confidently and with as great a degree of safety as by sunlight. There are no dark corners or alleyways in a factory lighted on these lines. Belts and moving machinery are clearly visible at all times. Intricate adjustments can be carried out without any difficulty or danger. Workmen can move about without the risk of falling or stumbling over things thrown or placed on the ground. Shadows which ensnare

the feet, the glare of exposed lamps, and reflections from polished surfaces which confuse the eye and lead to dangerous miscalculations, are totally absent in factories where uniform and well-diffused general illumination is employed.

Of course, in regard to intensity of illumination, safety may be assured with a lower intensity than is required for maximum production. On the other hand, if the factory manager plans his lighting on the basis of maximum output, the question of safety will take care of itself. Obviously, anything which is detrimental to safety will also be detrimental to production.

HYGIENIC CONSIDERATIONS.

Although safety from physical accident may be secured by a lower intensity of illumination than is required for maximum output, nothing short of the best lighting will avail effectively to safeguard the health of the employees. When it is said that production falls off during the period of artificial lighting, what does that signify in addition to the bare fact of decreased output? Surely it implies poor vision, because if the operator could see as well as by daylight he would do as much work. Now, poor vision may be the result of inadequate light, or of glare, or of specular reflection; but in any case it means that the eyes are functioning in discomfort and difficulty. Whenever the eyes are used under conditions which render proper vision impossible, there is bound to be a certain amount of eye-strain. It may be slight, but the effects are cumulative, and in time the sight of the victim will be permanently impaired. The prevalence of visual disabilities of one sort or another, not only in factories but also in offices and shops, is a tragic monument to the almost universal disregard of the fundamental laws of good lighting.

Eye-strain has also a serious effect on the general physical and nervous condition. Quite a large proportion of physical and nervous complaints may be traced to this cause, so that poor artificial lighting has a great deal to answer for at the bar of national health. Under modern conditions of intensive production, and in view of the growing tendency toward a general adoption of the triple-shift system as a means of securing the utmost return from capital expenditure on plant, it is absolutely essential that the question of visual comfort should be given a great deal more attention than it has received in the past. Otherwise there is going to be a big boom in the eyeglass business and a largely increased demand for nerve tonics.

Cleanliness, tidiness, and cheerfulness are promoted by good lighting. In a shop where there are no dark corners there will be no dirty corners. Workmen are not tempted to throw rubbish on the floor or to leave things lying about in a well-lighted factory. The electric light is in itself perfectly clean, and, providing the illumination is adequate, it is bound not only to create no dirt, but also to prevent the creation or accumulation of dirt from other causes. In a dark and dingy workshop a spirit of gloom and depression is inevitable. The cheerful spirit which conduces to contented and efficient work is only possible under good illumination. A bright, well-lighted factory has an altogether wholesome influence in enhancing the keenness and attentiveness of the workpeople.

Years ago industrial economists were rather in favour of frequent labour changes as a means of keeping down wages, and perhaps that is the reason why so many factories were lighted in such a

manner that the workers could not stay long without endangering their health and spirits. That principle was always discreditable, and it is now discredited. It is recognised nowadays that an experienced staff is always worth keeping. But employees will not stay in a factory where the working conditions are not good, and the condition which has, perhaps, the greatest and quickest influence in attracting or repelling the modern mechanic is that which relates to artificial illumination.

Our Illustrations.

ST. PAUL'S CATHEDRAL, LONDON.
ROYAL INSTITUTE OF BRITISH
ARCHITECTS' SILVER MEDAL
PRIZE DRAWINGS, 1920.

Very few measured drawings of Wren's masterpiece are available to students, and not many correct geometrical details have been published, consequently our reproductions of Mr. Arthur F. E. Poley's silver medal prize set of the west front which we commence to-day will be much appreciated. Our metropolitan cathedral is too well known to need any description here, but some historic particulars not commonly familiar will be useful for reference. Among Wren's drawings extant there are none absolutely identical with St. Paul's as built, and not one of his working details has been preserved. This may be accounted for by the difficulty in those days of reproducing drawings, consequently copies were not made unless they were absolutely necessary. Wren constantly revised and modified his original drawings, and often made most careful studies of alterations which he ultimately decided on. There are abundant proofs of this; for instance, an engraving by Gribelin, dated 1702, exhibits the accentuation of his coupled columns by the placing above them of pairs of statues. The ecclesiastical outline of the plan of his church is a Gothic conception expressed in Italian ideals, and this was due to the catholic predilections of the Caroline divines. With the exception of York Minster, St. Paul's is the broadest of English cathedrals. Charles II. issued by Royal mandate letters patent to the Lord Mayor on November 12, 1673, ordering the Surveyor-General Sir Christopher Wren to design an entirely new cathedral. The axis of the lay-out was shifted a little towards the N.E. to avoid rearing the new fabric on the excavations of the walls of old St. Paul's. Loam or pot earth extended over the whole site in varying thickness except at the extremity on the N.E., where probably in Roman times the pot earth had been quarried, leaving nothing but gravelly sand to build on, and this caused much trouble. The first stone of the church was laid in 1675. The choir was opened for service in 1697, and in 1710 the highest stone of the lantern on the cupola was laid in the presence of the great architect, when he was seventy-eight years of age. He was born in 1632, and died in 1723.

THE EXHIBITION HALL, AUSTRALIA HOUSE, LONDON.

This monumental assembly hall is constructed of marble specially quarried in Buchan, Victoria. The work was executed by Messrs. Jenkins and Sons, of Torquay. The bronze work was carried out by Messrs. R. F. Ramsay and Co., of London. Messrs. Turner Lord were responsible for the stucco ceiling. The hall is on the main axis of the building, and a fine vista is obtained from the main entrance at the

east end right through to Melbourne Place on the west. The plan given by us on July 4, 1913, shows the lay-out and handsome aisles of this lofty hall. The King opened the building on August 5 last year. This year the photograph now illustrated was exhibited at the Royal Academy. Messrs. Marshall Mackenzie, LL.D., A.R.S.A., and A. G. R. Mackenzie, FF.R.I.B.A., of Chelsea, are the architects. The picture is taken looking towards the chief entrance and St. Clement Dane's Church.

CHURCHYARD GATE, HOLME-ON-SPALDING-MOOR, YORKSHIRE.

Strictly speaking, this is not a lychgate, as there is one already in use in the same churchyard. It is a war memorial, and is being carried out in Weldon stone, with a roof of oak, and the crucifix figure is carved out of the solid oak upright. In the inside of the flanking walls two panels bear the names of the parishioners of Holme who were killed in the war. The roof is covered with Yorkshire stone slates. The architects are Messrs. Temple, Moore and Moore, FF.R.I.B.A., of Hampstead. Their drawing was shown at the Royal Academy War Memorials Exhibition.

INCANDESCENT ELECTRIC LIGHTING.

The British Thomson-Houston Company, Limited, have issued a new and revised edition of their Incandescent Electric Lamp Handbook on Group 1. Vacuum and half-watt type Mazda lamps will be welcomed by all concerned in the sale or purchase of electric lamps. This handbook (No. 1 B), containing sixty-four pages of letterpress and illustrations, gives complete information on all Group 1 Mazda lamps, that is to say, on all lamps, both vacuum and half-watt, of 20 volts and above. These comprise vacuum-type Mazda lamps for ordinary lighting services, and also traction, train lighting, tubular, and candle lamps, while in the half-watt section are included both regular and train-lighting types.

Twenty pages are occupied by scale illustrations of lamps and tabulated information, and, apart from this data, the handbook contains a great deal of general information on the related subjects of lamps and lighting. One extremely useful feature is a glossary of terms used in the incandescent lamp industry, including definitions of the various classes of buyers.

In view of the acknowledged shortcomings of the candle-power unit as a measure of light output, the section describing the lumen will no doubt prove of considerable interest. The lumen is an absolute measure of light output, which can be applied with equal accuracy to lamps of all kinds and forms of filaments. The candle-power, on the other hand, is merely an indication of the intensity in one direction, or the average intensity in a single plane. It is therefore obvious that for the purpose of efficiency comparisons, it is desirable to use the lumen, which expresses the total amount of light emitted by the light-source. The lumen values of Mazda lamps are shown in the tabulations.

The last section of the handbook gives brief definitions of the more important terms and units employed in illuminating engineering. The handbook, apart from its value as a catalogue of Mazda lamps, is a useful book of reference on many of the technical and commercial problems encountered in modern electric lighting practice. Single copies may be obtained on application to the British Thomson-Houston Company, Limited, Mazda House, 77, Upper Thames Street, London, E.C.4. Requests should definitely specify No. 1 B handbook.

The design by Mr. Talbot Brown, Wellingborough, has been adopted for the war memorial at Great Easton. It is a cross 18 feet high, with the names of the fallen inscribed on the base.

SURVEY ON THE WESTERN FRONT.*

By CAPT. WILLIAM H. TAPP, M.C.†

(Continued from page 134.)

From the battery as centre an arc was pasted on the map from which the gunner could read to 10 minutes of arc directly, and to 2 minutes by estimation, an error generally much smaller than that of the actual gun. The heights of special targets were given on the map, and the gunner could then get his angle of sight (as distinguished from alignment) and range; if the target was off the board its co-ordinates were given, and as the boards had the co-ordinates of the battery invariably written on them, it became a very simple matter to obtain both range and direction.

In the first instance, all batteries were fixed by the field survey battalions, but eventually, as the work extended, they did only the heavy and siege, all the field and light batteries being done topographically by special corps topographical sections.

Heavy batteries were always placed from theodolite observations.

The targets for counter-battery work were obtained by three methods:—

- (a) Flash spotting.
- (b) Sound ranging.
- (c) Air photos.

(a) FLASH SPOTTING.

Stations were placed at various points of observation, such as steeples, towers, houses, mine dumps, or other built observation posts, connected with the main triangulation, and to each other by phone. Each station had its observers, sight veins, or directors, and on observing a flash from an enemy gun, placed its directors in the line of the centre of the flash, and warned the other stations in the same system that it was observing in a certain direction. These other stations then took their directions, and in this way a series of lines from fixed bases were drawn to a certain gun flash, and its mean position located. Watches had to be carefully synchronised in this earlier system.

Later in the war (end of 1916) the "Hemming Flash Buzzer" system was initiated, the working of which was as follows: A "leading" observer was told by Headquarters of his system to pick out a certain flash and observe on to it. Each time the flash appeared in his telescope he pressed a button sounding the buzzer at H.Q. The observers at the stations watching through their instruments could hear the buzz, and by this means were greatly aided in picking up the right flash. They in turn observed and sounded their buzzers. The operator at H.Q., when satisfied that all were on the same flash, told the observers to book and report their readings.

The essence of the system was that not only was H.Q. and each station connected by this instrument, but that the stations themselves were also connected by it with each other, and could buzz or show a light at H.Q. at will.

The Boche, however, had many means of causing artificial flashes, so that all recorded gun positions had, in the first instance, to be sent to the R.A.F. to be checked by direct observation; and here let it be stated that this was not always the easiest thing in the world to do, for even in the best of topographical maps the positions of woods, roads, etc., will not be throughout in exact agreement with the triangulation; and as, of course, the R.A.F. observer had to rely on topographical features from which to spot, the recorded co-ordinates for the enemy gun position frequently differed slightly from the actual or trig. position co-ordinate, and, apart from these technical difficulties, such positions were always those most jealously guarded by the enemy, and the R.A.F. had thus serious material difficulties to face as well.

Flash spotting is a very old system, and up

to a point gives good results. These, however, must invariably be checked by sound ranging and air observation, or, at all events, by the one or other of them, especially when dealing with such wily subjects as the Boche.

All kinds of instruments were tried for observing from stations, sight veins, directors, French telescopes, theodolites, and Coles' flash-spotting instrument, and at the end of the war French telescopes were used for all horizontal and theodolites for all vertical observations.

Coles' instrument would have supplanted the telescopes and theodolites, but was not ready for complete issue when the armistice was signed. It consisted of a telescope with a large field of view, and the arc of the theodolite projected by prisms into the field of view, so that bearings could be read without removing the eye from the telescope.

It perhaps should be stated that a valuable check on a series of "directions" from stations was often obtained where the time between flash being observed and report heard at each post was recorded.

Amongst a mass of administrative work, inspecting telephone lines and gear, the officer in charge of a system of flash-spotting stations also had to see to calibration tests, fixing gun positions, and the imparting of local knowledge to newly arrived gunners, etc. Calibration was usually performed by the stations observing on to a "burst" on the ground and getting guns on to a target by observing on to a "burst" in the air arranged vertically over the target, known as ranging on the trajectory; in both these cases the essence of success was to be able to impart results rapidly to the batteries. This demanded phone connection and that all results should be obtained graphically. Many systems of "graphs" were invented for this purpose, and the success obtained was of a high order.

The difficulty to be overcome was the immobility of a system in a sudden advance, and, generally speaking, systems of a few thousand yards' base had to suffice in such cases, and after some practice a certain amount of mobility was secured; but it is a fact that the sound-ranging systems suffered to a much smaller extent in such eventualities.

The results sent to H.Q. were tested by airmen and flash-spotting returns until a reliable target was reached, when the artillery were given the job of dealing with it.

The system of microphones was excellent up to 10,000 yards behind the enemy lines, but for greater distances a greater base was required, and two or more systems of microphones were put on to the work, as in the case of Big Bertha firing into Paris; her position was spotted exactly from two systems, and checked from a third. The airmen then went out and made a reconnaissance, and also observed the counter-battery fire, with the result that very shortly this thorn in the flesh for the unfortunate Parisian was permanently removed.

After the battle of Messines, 1917, over 93 per cent. of the actual German battery positions were found to have been spotted by the sound rangers, and I believe I am correct in saying that wherever a question had arisen as to the exact position of the enemy battery, the sound rangers were proved to have been invariably in the right.

In such a system the personal factor, a most important one under such conditions, is entirely eliminated, and we get an absolute mechanical accuracy, the one varying factor being the rate sound travels owing to the atmospheric changes.

(b) AIR PHOTOGRAPHY.

Observers in their aeroplanes were sent out to spot enemy guns and to take photos for various reasons. From above they recorded the flash or smoke from any gun, and recorded it either on the map or on the photos taken at the time. The observer naturally had to work from physical features, such as crossings on roads, woods, hill tops, or other prominent objects, such as chimneys, towers, or houses, and, as has been explained, except where these points were actually tied on to the triangulation system, the results could not be expected to be perfect, but by reference and comparison with sound rangers,

* Read at the Ordinary General Meeting of The Surveyors' Institution, on Monday, February 16, 1920.

† In writing this article I am indebted to M.I.A. and especially Colonel E. M. Jack, for valuable hints and various photographs; also to Lieut. Colonel Winterbottom for some hints on sound ranging, and also for the use of many interesting photographs; and to the Royal Geographical Society for the loan of blocks for illustrations.

flash spotters, captured reports, or enemy orders, a good mean position could nearly always be assumed.

Sometimes the R.A.F. were asked to provide panoramas taken from the air of a certain run of enemy trenches. This work entailed great dangers, as it had to be done from a low altitude, but we always got what we wanted. People at home perhaps do not recognise what magnificent spirit was shown by these young R.A.F. officers, and really are unaware how most of the men serving them simply jumped at a chance of a more than usually difficult or dangerous job—and here I refer to all branches of the Service.

BOCHE METHODS.

Previous to the war the enemy had earned for himself a high title to respect in all matters scientific, and amongst these survey had been included, but, as will be shortly shown, his military methods did not tend to give easy working or accurate results.

In the first place each army had an entirely separate survey, and generally initiated a separate zero point from which to start its grids. Maps have been captured showing on one and the same sheet trenches and detail, plus as many as three systems of grids. We can imagine a much worried Boche, faced with the following problem: Gun on Rheims grid, target on Paris grid, trig. on Lille grid, and a furious gunner general demanding an instantaneous reply as to bearing and distance. We can picture many errors, and perhaps as many oaths.

The maps used were photographic enlargements of the French 1:80000 to a scale of 1:20000 with contours either roughly drawn in from the original hachuring, or from maps captured from us, valleys in green, after the Austrian staff fashion.

When we had at the later stages of the war opportunities of comparing the Boche with our own map, we invariably found ours the more accurate. The Army system worked well enough as long as a war of positions continued, but fell entirely to pieces as soon as they were forced to retreat in earnest, and there were always difficulties to be overcome at the junction of the two armies. When different zeros were in use evidently the values of a trig. point from the two zeros added would not give the value of the difference in co-ordinates of the zeros themselves, if from the convergence of meridians, and the consequent change of azimuth alone, let alone errors of survey, etc. The value of such error is given by the formula $\Delta L \sin \lambda$.

The Germans had much the same system of flash spotting (*Lichtmessstrupp*) as we had, but their sound ranging (*Schallmessstrupp*) was vastly inferior. He had a forward observer who watched for the flash or the report of a special gun. On receipt he sent a "buzz" on his telephone which communicated with the observers behind spread over an area of from 10 to 12 kilometres. (There were no microphones or automatically working galvanometers to record the receipt of the sound.) These in turn awaited the receipt of the report, and stopped their stop-watches at that moment. This very rough method, based on difference of rates for sound and light travel, besides working errors, included that very variable factor, the human.

Ludendorff was most anxious to capture one of our systems, he being in a better position than any of us to know how marvelously accurate were the results obtained, and he offered a suitably handsome reward, but never succeeded in his quest.

The Germans built beacons of fir poles to designate their trig. stations, and often these came into service for our surveyors when we made a rapid advance. There was one which appeared from a small wood north of Loos and fronting Ferme des Mines, which was so cleverly placed with its background of chimneys that for a long time it remained unspotted by the surveyor, but when it was, and seen on closer observation to be used as an observation post as well, it did not last many hours.

The Boche initiated the very able and simple idea of fixing points in woods and other places difficult to observe on to or from by sending up vertical flares and rockets therefrom, and intersecting these from already known trig. stations.

The Boche really started the war with much the same material for survey that we had, and from material captured late in the operations we discovered that he had all, or nearly all, the results of the Nivellement général de France, and of course he had all the Lille Communal Cadastral Survey manuscript, whereas for the same area we had to be content with the communal index at Paris. He did his triangulation carefully, and nearly all his beacons, with observation posts attached looking like latticed cones, came in as most useful accessories for us when our advance really commenced in earnest, but the topographical and detail departments were never up to our standard, partly owing, it is true, to the Army system of survey, but also to a large extent to the poor field work and lack of initiative (*cide* his later maps), and the poor contouring, and his need of a good sound ranging system.

The Germans showed an extraordinary disdain, as a rule, for information supplied on maps captured from us. In their advance on Amiens in 1918 they had opportunities of obtaining much that would have been most useful to them from supplies left behind almost by the ton, and yet, as far as we know, they did not take it. I believe myself this was due to the fact that they hesitated to accept anything that might have been left with the object of their being induced to accept it; but be that as it may, they at all events on that occasion missed an opportunity which would have well repaid the taking.

LESSONS FOR SURVEYORS.

I think all surveyors have learned that they will in future be a necessity in time of war to the gunner, and that the first thing to do will be to produce a map on which distortion will be so small that for all intents and purposes any object will be describable in co-ordinates from the zero point. An orthomorphic projection will then be a necessity, and some means of eliminating errors arising from the distance from the central meridian, where such is the case.

In future, then, all armies will *de facto* be equipped with a field survey, and that survey will have to have a large reproducing staff with it, for many maps of operations or organisation, for example, are so important, and so constantly varying, that they must be printed at the place and without any delay. The Americans had reproducing presses fitted in lorries, and were supposed under conditions of movement of the worst kind to still be able to produce about 5,000 maps or so during the hour, so evidently there is hope that in the future it may be possible to form a very mobile field survey equipped with lorries and printing staff.

The flash-spotting and sound-ranging sections will have to be able, in the future, to survey their own positions, and whilst being linked to the field survey will be a separate organisation as regards transport and movement.

I think also that we have learned that it is more accurate in the field to allow the plane tablers to fix a series of reference points in the field only, and to plot all the detail work from photos corrected, and then sent out to the field with the detail all plotted for checking and supplementing if necessary.

Resection has gained a high place in the methods of war trigonometry, and will be used more frequently in the future. Where time is a factor, some graphic system, as used in plane table work, should be elaborated.

The grid where drawn should be a *metric grid*: two positions then given, distance and bearing could be almost automatically given, and accurately.

Helios will be found most useful for marking trig. stations. They will be used again for the same purpose in any new wars.

SURVEY: ITS ACTUAL WORK AND EXPERIENCES.

I remember in 1916 a call came to a survey section for the placing of several mineheads from which tunnels had been driven under the Boche. The following is an extract from the surveyor's report:—

"4/11/16.

"C.R.E., 1st Div., gave me the best job I've had since I've been out here. On 5th I went out to commence the work. It consisted

in fixing certain positions on or close to the double crassier for mining operations and other field engineering works. The crassier is called double, as it bifurcates for the last 800 yards or so, the two arms running out almost parallel in a N.W. direction into the Loos Valley. The single end is held by the Boche, the southern arm by him also, the northern by us. I found positions 1 and 2 easy; at 1, shells were falling in front and behind; at 2, all was quiet, but 3 was impossible. Twice the periscope was put up and smashed by bombs or bullets. Position 3 is near the end of the crassier, and not 60x from that held by our friends the Boche. There appeared only one way out of it, and that was to take tape from 2, a clear run of about 300x, as the intermediate trench was filled in with wire. I looked at my corporal and couldn't bring myself to ask him to do it, so I issued bombs all along the trenches, and got the Huns deluged with them, whilst I climbed up over, feeling colder even than the weather, and bolted down the line as fast as my limbs would move. I felt a 'fiz-fiz' past me as I neared the far end, but no harm, and leaped back safely into the trench to the position from which I could work at 3.

"I spent the 6th plotting the positions which disagreed slightly with the topographical position.

"On the 7th gave in the results and received orders for three more from C.R.E. again, so went out to complete my duties. It was damned cold, and a bit misty, too. Got to point 2, fixed satellite station, and then taped right over the side of the crassier to Putney Hill shaft, and got pretty actively shelled; proceeded to mine 15 shaft, close up to the main Boche trenches, and resected another position. Also got an excellent check on Putney Hill. It was a bit hot here, shells falling all around, and clumps of rock and mud thrice displaced the theodolite, but got the work done just before dusk. Returning, found 40x of trench knocked to bits behind us, but mercifully it was snowing hard, so we crossed the open bit within 300x of brother Boche, rapidly, it is true, but in safety.

"Later on, 17th, these mines were exploded, and many a Boche went to his eternal rest."

"Another extract will help to give an idea of the varied duties a F.S. officer was called upon to perform—

"February 3 16.

"We have a job to do fixing a German O.P. in the woods; got rays from Cunchiv, Vermelles, and then went to Loos for the third. The position lay somewhere in Bauvin Wood. We crawled up Loos Crassier, and then proceeded along as far as we could, belly-crawling to an overturned mine skip. There Docker, my man, and I lay trying to get the instrument set up. The first time a bit of shrapnel hit my helmet, the second time the periscope of the theodolite was smashed, and the third time a bullet went between us. The fourth time we succeeded, but now we had to get back with our information. I shall never forget it! I think a deluge of rain must have made the Huns' observation bad. The following day the heavies put the O.P. out of time for ever."

The F.S. officer's duties consisted primarily in—

(a) Extending existing triangulation, and from it producing an up-to-date map. I think enough has been said on this point.

(b) Work for the artillery—battery boards, targets, etc., already explained with the methods. In some cases before a large set battle a number of heavy and siege batteries would arrive in position, and all these had to be supplied with the necessary boards and information in double quick time, and the information had of necessity to be accurate, as no ranging tests were permitted. The best element of surprise would otherwise have been forfeited. Sometimes climatic conditions were most unfavourable, but the work was always done in good time. A momentary glimpse of the sun gave an opportunity for an azimuth to be taken, or perhaps a distant bearing could be taken from a short base to some previously fixed point close at hand. I remember once being called on to fix sixteen batteries for such an offen-

sive between midnight and 3 p.m. the following day. The work was done, but, alas! was never used, as the planned attack was countermanded.

(c) Miscellaneous duties, as explained in the two extracts given, and a variety of incidental work such as the correcting of compasses or ascertaining their general variation. Early in 1915 bases were laid out on the true meridian, and compasses from every description of unit were soon pouring in to be tested. In the later years a magnetic survey was carried out under Lieutenant Mitchell, with a magnetometer from Kew at 83 stations. Corrections for diurnal inequalities and the reduction of readings to January 1st, 1918, were made. The corrections were made by a simple comparison of the readings at Kew for the date, and those at the Front on a similar date. The results were valuable, and showed the general figure for variation in France to be about 30 minutes too large. The compass, however, is an instrument not to be relied upon in such a war as this has been, as at places there are tons of rusted iron projectiles lying in or above the soil, and this, of course, has an effect on the movements of the needle. My experience was "Best leave it entirely alone where any other methods can be employed."

(d) Distribution of maps and printing. The F.S. Companies had to distribute and print a vast quantity of information, material, maps, and orders of all kinds. The companies each averaged an output of about a quarter of a million every month roughly, and, in all, the Ordnance Survey with its overseas branch produced over thirty-two million, so that we can safely say that from start to finish something like one hundred million maps were produced by us, for the purposes of this war in France alone.

In completing this short summary, I should like to say how very much I appreciated the opportunity of working under the able chiefs who have been already mentioned. It has been an experience in every sense of the word, and it is a very great pleasure to know that at the end the British were top dogs at this work, as they proved themselves to be in almost all other directions during this war.*

COMPETITIONS.

ACCRINGTON WAR MEMORIAL, SKIPTON WAR MEMORIAL, AND HOUGHTON-LE-SPRING SECONDARY SCHOOL.—Members of the Society of Architects are requested not to take any part in the above-named competitions without first ascertaining from the Society that the conditions have been approved by the Council.

The building for the new South African Mint is to be erected on the site of the old Pretoria gaol in Koch Street, and the plans have been submitted to the Royal Mint for approval.

The death is reported in Paris, at the age of seventy-five, of M. Marcel Dieulafoy, who will be remembered for his interesting archaeological researches in Syria and Persia, and especially for his discovery of the remains of the Temple of Darius.

Mr. John Howard Wythes, of 59, High Street, Dudley, Worcestershire, sanitary engineer and decorator, who died, leaving £22,669, gave £750, the goodwill of his business, and one-tenth the residue of the estate to his manager, Herbert William Jones, and £200 and two-tenths of the residue of the property to Frederick Hirst Goodhind, if still in his employ.

A Liverpool merchant, the late Mr. John Williamson, residing at Birkenhead, left £20,000 to the town for an art gallery and museum, subject to the life interest of his son, Mr. P. A. Williamson. The latter recently died, and has left a further £20,000, and the town thus receives the joint legacy of £40,000 from father and son.

* Our report of this most interesting and valuable paper is necessarily incomplete without the numerous diagrams and illustrations given by the lecturer. The paper is given with all such in Part V. of this Session's "Transactions," published at The Surveyors' Institution, 12, Great George St., S.W.1. Beyond doubt, surveyors will be more in request than ever in the next war, as Captain Tapp says. That they will respond as he testifies they did to the calls of particularly dangerous service with the same pluck and energy goes without saying, and that his record will most usefully aid in their preparation is equally certain.—Ed.

Building Intelligence.

DUBLIN.—The new business premises of Messrs. Eason and Son, Ltd., wholesale newsagents and booksellers, erected in place of those wiped out of existence in 1916, were opened on Monday week. The frontage to Lower Sackville Street is 43 ft. 6 in., and that to Middle Abbey Street 79 ft. 6 in. On each front the building stands seven storeys high over the basement, and the two portions are connected by the basement and next three storeys. Each of these four floors forms an expanse equal to the whole area, while the total floor space is equal to 1½ acres. The entire building, including the roofs but excluding the fronts, is of ferro-concrete. The Lower Sackville Street front is of polished red granite up to the level of the fascia, the remainder of the façade being Irish limestone, from the Aghnamadock Quarries, Queen's County. The shop front consists of two large windows, separated by a handsome porch, panelled in mahogany, and surrounded by large showcases. The Middle Abbey Street front is entirely faced with Irish granite from the Ballyknocken quarries. The building was designed by and erected under the supervision of Mr. J. A. C. Ruthven, C.E. It is built of ferro-concrete, the contractors being Messrs. J. and P. Good, of Dublin. The decorative limestone carving on the Sackville Street front of the building, and the granite carving on the Abbey Street front, is the work of Mr. W. J. Greene, architectural sculptor and modeller, 14, Ashfield Avenue, Ranelagh.

NORWICH.—The small Norman chapel in Norwich Cathedral, which has been restored and beautified as a memorial to the late Archdeacon Westcott, was dedicated last week. The chapel hitherto has remained built up, and in its reopening and restoration no tampering has been allowed with its ancient features. It is situate very near to the tomb of the late Bishop Pelham. At the entrance a Jacobean screen in oak has been erected from the design of Sir Charles Nicholson, and the altar of stone has also been built according to the design of the same architect. The structural work was carried out by Mr. C. F. Harrison under the supervision of the Cathedral architect, Mr. C. J. Brown.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

At the general business meeting held on Monday last (Mr. John W. Simpson, President, in the chair) it was announced that the Council's nomination of Mr. Charles Louis Girault, Hon. Corresponding Member of the Institute, of 36, Avenue Henri-Martin, Paris, had been decided on for the Royal Gold Medal for 1920. The following elections to the Fellowship took place, viz.:—Messrs. T. Lawrence Dale, Lieut.-Col. J. E. Dixon Spain, O.B.E., A. R. Gough, T. Sedgwick Gregson, J. Wm. Hemings, Major Bernard F. Matthews, R.E., Charles Nicholas, H. E. Marston Powers, Lieut.-Col. Peter G. Fry, C.M.G., D.S.O., and T. Faulkner Shephard. Seventy-three Associates were also elected.

The following resolution, proposed by Mr. Sydney Perks, F.S.A., and seconded by Mr. A. W. S. Cross, M.A., Vice-President, was unanimously confirmed:—"That in the opinion of this meeting no member should be nominated by the Council for re-election unless he has attended at least half of the Council meetings, this rule not to apply in exceptional cases, which should be explained in the Journal."

A memorial tablet to the late Lord Beresford is to be erected in the crypt of St. Paul's Cathedral, at a cost not exceeding £1,000. The bulk of the memorial fund is to be spent on objects benefiting seamen.

According to a return issued, the cost of the Woolwich housing scheme carried out by the Office of Works during the war amounted to £821,342, of which £40,381 was for the acquisition of land and £714,894 for the erection of buildings, while roads, sewers, etc., accounted for the rest.

Correspondence.

To the Editor of THE BUILDING NEWS.

Sir,—I am directed to convey to you the following resolution passed by the Executive Council at this reformation with reference to the interim report of the Management and Costs Committee of the Industrial Council for the Building Industry, and frequently referred to as the "Foster Report":—

"That the interim report presented by the Management and Costs Committee of the Industrial Council for the Building Industry meets with the strong disapproval of this Council. We instruct our Administrative Committee to take all necessary steps to give expression to our disagreement."

My Council would be glad to see the resolution given a like publicity to that given to the Report.—Yours faithfully,

A. G. WHITE, Secretary.

The National Federation of Building Trades Employers of Great Britain and Ireland.
48, Bedford Square, London, W.C.1.
March 3, 1920.

WAYGOOD-OTIS WAR HEROES REUNION CONCERT.

A reunion concert to welcome back the employees of Messrs. Waygood-Otis, Ltd., who joined H.M. Forces during the war, was held at the London Scottish Headquarters on Saturday, February 28, 1920.

Invitations had been issued to about 200 ex-Service men, who with their friends and others made a gathering of about 600.

Mr. H. Claude Walker, Chairman of Waygood-Otis, Ltd., presided, and was supported by the other directors, namely, Messrs. D. W. R. Green, C. Clarke, R. H. Thorpe, H. Harnsworth, and C. H. J. Day. The band of H.M. Royal Horse Guards (Blues) played selections, and a very complete musical programme was organised by Mr. Emile Burnel.

It might be mentioned that 485 of the company's employees had joined H.M. Forces during the war.

STATUES, MEMORIALS, ETC.

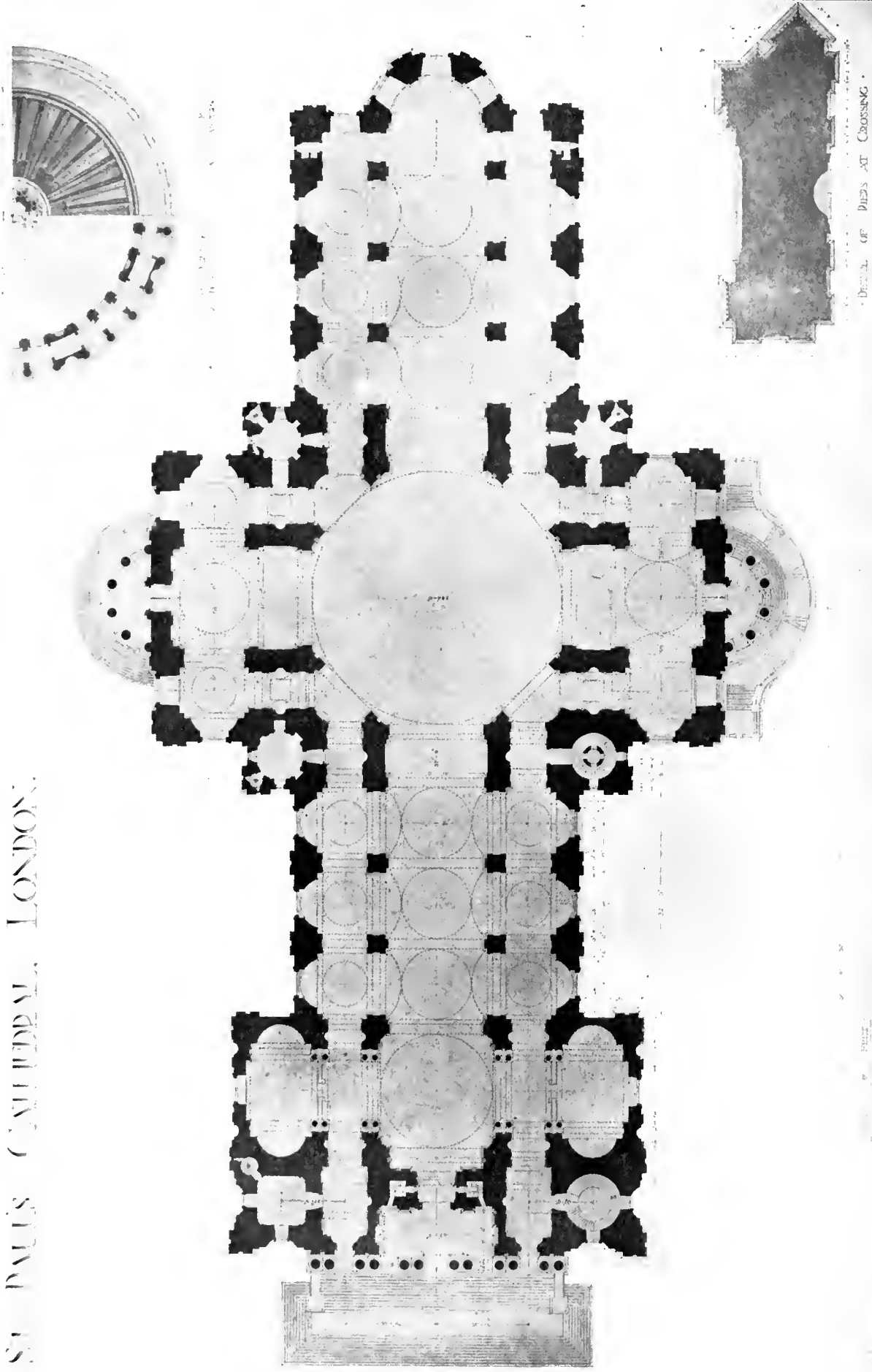
CASSELL'S WAR MEMORIAL.—On Monday last the Lord Mayor, Sir Edward Cooper, unveiled, in La Bello Sauvage Yard, Ludgate Hill, a roll of honour erected by the directors and staff of the house of Cassell in memory of their colleagues. The tablet is of bronze engraved in simple Roman lettering with an inscription and the names of the men who have fallen in their country's service. The quotation selected by Kipling from Ecclesiasticus, "Their name liveth for evermore," fittingly terminates the roll of honour; whilst a frame of laurel in cast bronze symbolises the unfading glory which will ever enshrine their deeds. The tablet is mounted on a base of Hepton-Wood stone. The memorial was designed by Mr. Sydney Tatchell, F.R.I.B.A., of Westminster, and executed by Messrs. W. Rainbridge Reynolds, of Old Town, Clapham.

The history and architecture of St. Bartholomew the Great, Smithfield, will be explained in the church on the two last Saturday afternoons of this month. The crypt and cloister will be visited, and the newly-discovered Twelfth Century mortar or steep from the infirmary will be shown.

The first meetings of two of the sub-committees appointed under the Profiteering Act to inquire into the cost of building materials were held last Monday, one committee sitting to consider the prices of bricks, stone, and clay ware, and the other the price of timber. There are two other sub-committees to deal with light castings, cement, and mortar.

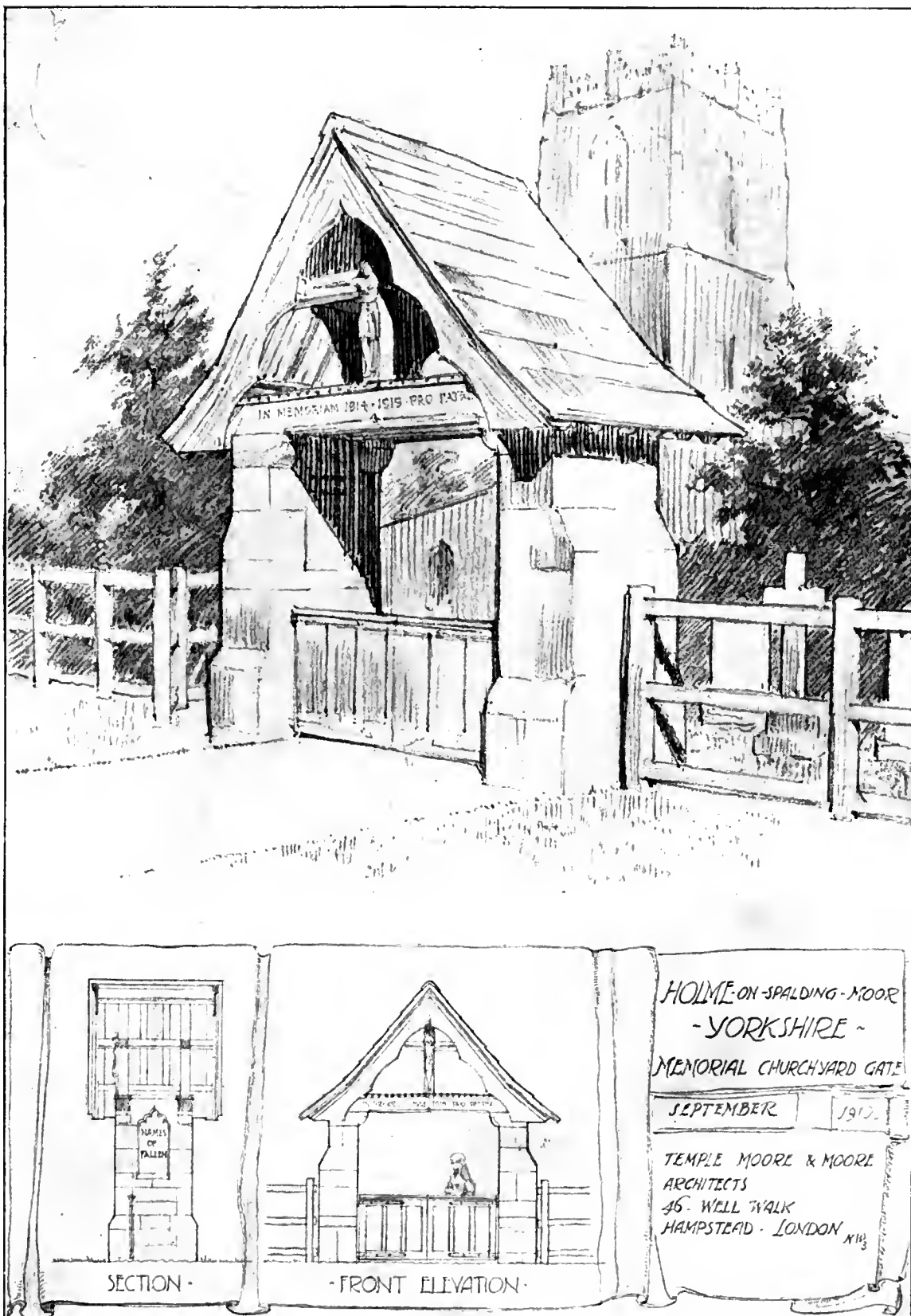
The memorial to Lusby men who died or served in the war was formally unveiled on February 22. It has been erected in the churchyard, facing the highway, and takes the form of a cross surmounted on a globe, which rests upon an urn, the latter being carved with festoons of laurels. The shaft is a hexagon, with hexagon bases, plinth, and steps, and the whole has been executed in Bath stone. The work has been carried out by Messrs. E. Browning and Son, of Spilsby.

ST. PAUL'S CATHEDRAL, LONDON.



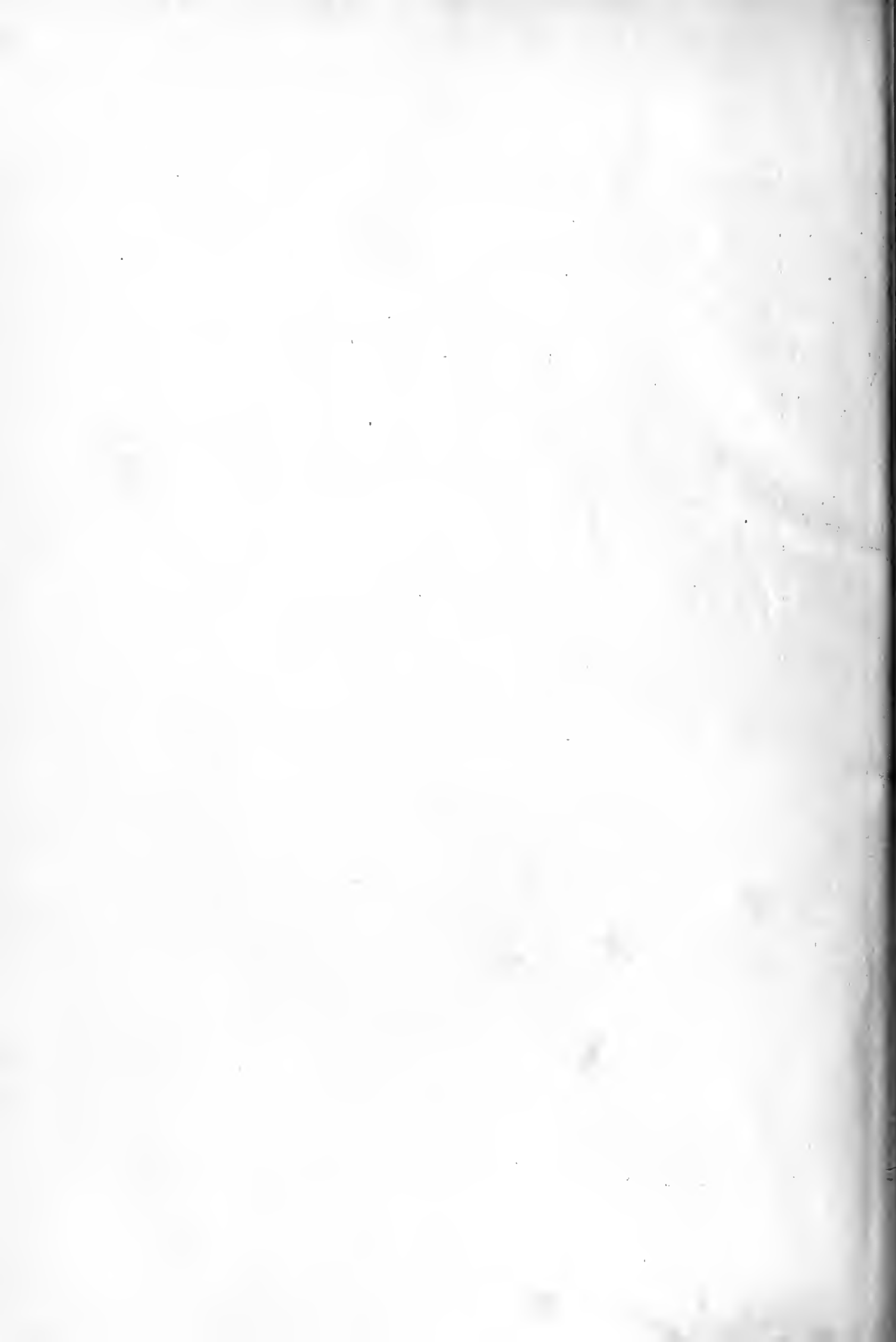
ST. PAUL'S CATHEDRAL, LONDON: ROYAL INSTITUTE OF BRITISH ARCHITECTS SILVER MEDAL MEASURED DRAWINGS.

By Mr. ARTHUR F. E. POLEY.



CHURCHYARD GATE, HOLME-ON-SPALDING-MOOR, YORKSHIRE.

Messrs. TEMPLE MOORE and MOORE, Architects.



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THE BUILDING NEWS, MARCH 5, 1920.



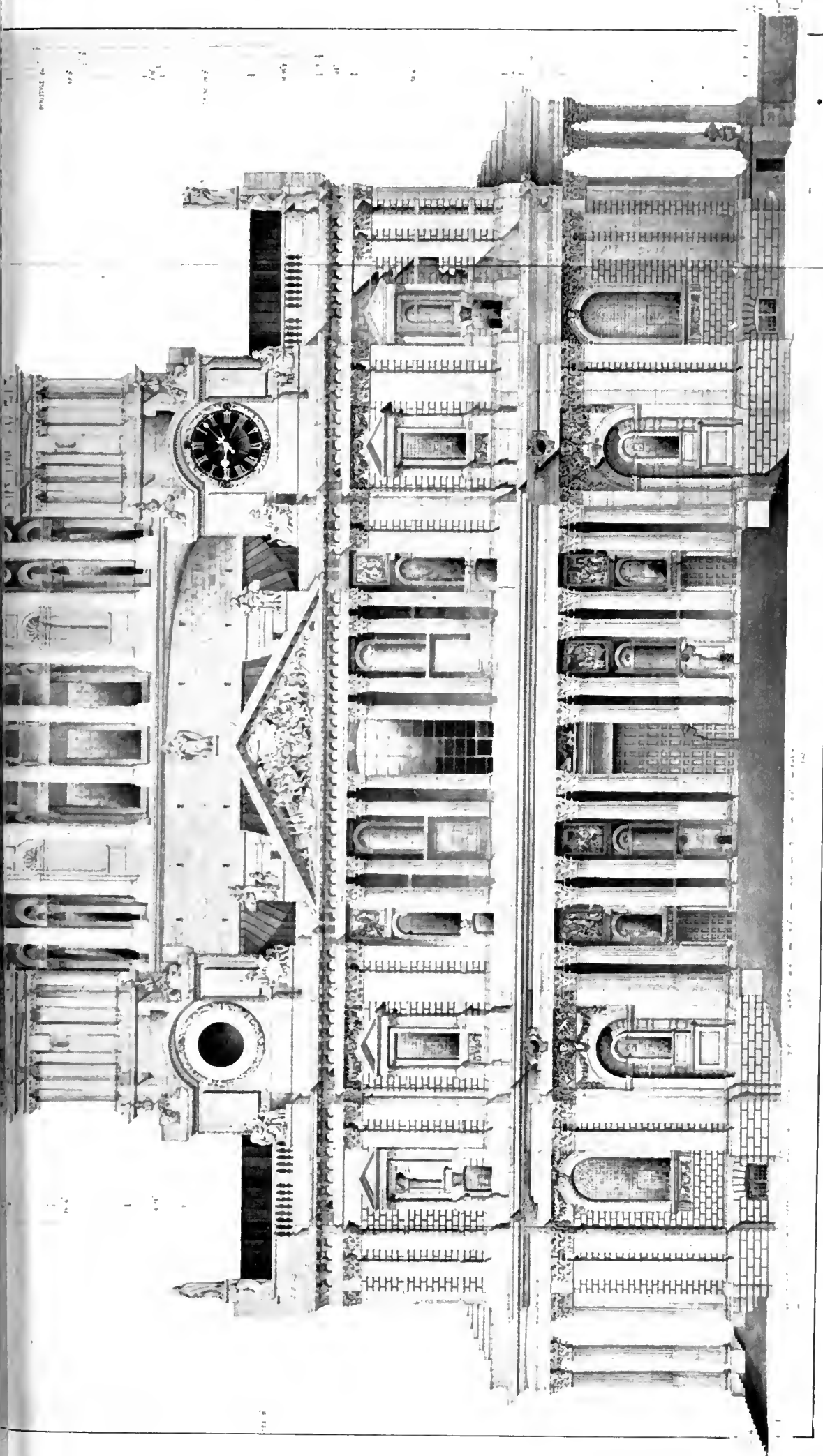


THE EXHIBITION HALL, AUSTRALIA HOUSE, LONDON, W.C.
MESSRS. A. M. MACKENZIE, LL.D., A.R.S.A., and A. G. R. MACKENZIE, F.F.R.I.B.A., Architects.

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THE BUILDING NEWS, MARCH 5, 1920.





WEST FRONT OF ST. PAUL'S CATHEDRAL, LONDON. SIR CHRISTOPHER WREN, Architect.
ROYAL INSTITUTE OF BRITISH ARCHITECTS SILVER MEDAL MEASURED DRAWINGS, 1920.
By Mr. ARTHUR F. E. POLEY.



PROFESSIONAL AND TRADE SOCIETIES.

ARCHITECTURAL ASSOCIATION.—At the ordinary general meeting of the Architectural Association on the 23rd ult., fifty-eight new members were elected and two reinstated. The result of the ballot to incorporate the Association as a limited liability company was announced, the voting for the resolution being 346; for resolutions one and three only, 13; against all three resolutions, 2 (see p. 71 of our issue of Jan. 30 last). An address was given by Mr. Clough Williams on "Different Methods of Cottage Construction," in which he advocated the use of *Pise de Terre*, claiming that it eliminated the cost of transport, cheapened labour, and materials, and coal. He mentioned that one of the managers of one of the great Rhodesian gold mining companies had refused to permit any buildings on their property not built of *Pise*, and contended that it was quite as suitable for the British climate as in Rhodesia, where it had to resist torrential rains.

ARCHITECTURE THE MISTRESS ART.—Professor G. Baldwin Brown lectured to the members of the Edinburgh Architectural Association on February 26 on "Architecture the Mistress Art." The lecturer said that in the popular estimation painting stood first among the arts of form, but architecture was in truth the most democratic of the arts, because it was the best in that it made the directest and the widest appeal. There were millions who could be made to feel the sublimity of the exterior of St. Paul's of London, while in painting they would only see what was superficial. The aspirations after the beautiful, with which Mr. Bevin, in moving words, had credited the dock labourer, could be best nourished by the great architectural monument. It was democratic, moreover, in that it brought about a community in the arts, their co-operation involving the wide diffusion of beauty among the objects of man's environment. With architecture the "mistress Art," and sculpture and painting confined to subsidiary operations, artistic epochs like the mediæval were possible, when, as described by William Morris, great buildings were erected and adorned to express the life and aspirations of the citizens. Style in the decorative and industrial arts could only be secured by the subordination of the part to the whole, whereas the picture painter claimed for his work complete independence. In painting and sculpture as practised in the modern spirit, the watchword was "Nature," and naturalism might be almost described as the poison of decorative art. Hence schools of design should be under the control of architecture, and painting and sculpture have their home elsewhere. In Edinburgh there had long existed an established home and a living tradition for those arts under the Royal Scottish Academy, and by encouraging and extending this work, while at the same time establishing on fresh lines a separate school of architecture and its subsidiary arts, an excellent new start might have been made. No advantage, however, had been taken of the opportunity.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.—The ninth general meeting of the session was held at the Medical Institute, Edmund Street, Birmingham, on Friday, February 27. The President, Mr. H. T. Buckland, F.R.I.B.A., occupied the chair, and thirty-two members and friends were present. Mr. Herbert W. Wills, F.R.I.B.A., read a paper on "Architects and the Public they Serve," in which he summarised his impressions of the outlook of the general public on matters of building, and the effect of their point of view on their action in daily life. The average man does not show more than a passing interest in architecture. Most men come in contact with building, since they must have a building in which to live. The architect is so frequently tied down by his client on the matter of expenditure that he is unable to do what he is inspired to do. Again, much annoyance is caused in the sketch plan stage because the client will not accept the design that is artistic and that the architect is keen on. Many of these obstacles are brought about by the fact that the public are not

sufficiently educated in architecture, and the lecturer pessimistically suggested that they never would be. They like to see lovely and costly buildings, but they do not like to pay for them; they do not seem to realise that architecture is an art, and that the architect not only carries on his profession to earn his living, but to satisfy himself that he is striving for the advancement of art and artistic feeling. He seems to lose touch with his fellow men through prolonged immersion in his profession, he is actuated by a burning enthusiasm, constantly striving to create that which will appeal to the higher and better sense of mankind. The erection of buildings by speculative builders are often an eyesore, simply because art is far from the conception of these men. The public seem disinclined to build for themselves that which is artistic; they rather prefer to buy something that is "ready built," though there may be little or no difference in the matter of cost. The lecturer strongly advocated the partnership of architects and builders. He said he thought infinitely better results would be obtained, and there would be a better understanding of each other's work. Mr. R. Savage, F.R.I.B.A., proposed a hearty vote of thanks to the lecturer for a most interesting and enjoyable paper. Mr. Salway Nicol, F.R.I.B.A., in seconding the vote, said he liked to take the optimistic view, and think that it would be possible to educate the public to appreciate good architecture in the future. Others to make remarks in supporting the vote were Mr. W. Doubleday, Mr. J. A. Swan, F.R.I.B.A., and Mr. A. Harrison, F.R.I.B.A.

FACULTY OF SURVEYORS OF SCOTLAND.—The annual meeting of the Faculty of Surveyors of Scotland was held at Edinburgh on the 25th ult. At lunch, at which Mr. Robert Jerdan, F.F.S., presided, Sir George McCrae, President of the Scottish Board of Health, said that while the fees of the Scottish surveyors were higher, the fees of the architects in England were higher than those with which Scottish architects were content. The whole thing was a case of battledore and shuttlecock between the Treasury, the Ministry of Health in England, and Scottish Board of Health. Costs of housing were mounting up almost daily. In one case there was an increase of 18 per cent. as compared with a similar house in practically the same locality a little time before. The cost of roads and sewers was simply unthinkable, working out in one scheme at £132 per house. They could not go on in these circumstances. He hoped the Government would inquire very carefully into the question of these increases. He would not say the position with regard to housing in Scotland was one with which he was entirely satisfied, but they were making great progress. They had already approved of schemes for 84,000 houses, and sites for 32,000. More important still, they had approved of tenders for 4,000. They had already sanctioned expenditure to the amount of £3,200,000. The Chairman, replying, criticised the methods by which the Ministry of Munitions had carried on building during the war without availing themselves of the services of surveyors. Dealing with the housing question, he asked the public to remember that housing took time, and there was no delay in the actual building so far as he could see in Edinburgh. He had a word of praise for what the Board of Health had done as regarded architects and surveyors. They could congratulate the Board on having on its staff architects who knew their work. Mr. H. A. Low proposed "The Architectural Associations," and Mr. T. F. MacLennan replied. Mr. James D. Gibson, who proposed "The Building Trades Associations," said that there was ten years work for a million men in Scotland, and they were looking to the practical men of the building trade to get the work done and difficulties smoothed over. It would be best to give a free hand to the people who would re-establish the great industry on the old sound economic and healthy competitive basis. Mr. Edward Bruce, who replied, spoke of the constantly increasing wages of men in the

building trade, and said that there was no chance apparently of a reduction of costs in that direction. On behalf of the Faculty, a presentation was made to Mr. A. K. Smith to mark his work in connection with the fixing of the modes of measurement. It was done by Mr. John Baxter for the western district, and Mr. F. H. Lightbody for the eastern. Mr. Smith briefly replied. The following new members were admitted:—Mr. Peter A. Finlayson, St. Andrews; Mr. James Hutton, Paisley; Mr. James Govan, Edinburgh. The following office-bearers were appointed:—President, Mr. Hugh A. Low, Glasgow; vice-president, Mr. J. D. Gibson, Edinburgh; secretary, Mr. William Johnston, 150, St. Vincent Street, Glasgow.

MANCHESTER SOCIETY OF ARCHITECTS.—Major Maule, D.S.O., M.C., gave an address to students on Wednesday, February 25, 1920. He classified his preliminary remarks under four heads:—(1) Formation of character, (2) Adaptability, (3) Technical ability, and (4) General culture. The first two had been essential qualities in war, and were no less necessary in the architectural calling. Self-imposed discipline was absolutely necessary if a student wished to raise himself above average ability. The nation was crying for competent men in every branch of life, and never were they more difficult to find than they are to-day. The students of the present generation had to make up not only for the lives of those who had fallen in the war, but also to supply the loss of technical knowledge that those who had served four or five years in the war had necessarily incurred. The object of prizes and studentships was to stimulate self-imposed work, and was only a means to an end. It was better to compete and lose than never to have tried at all.

NOTTINGHAM AND DERBY ARCHITECTURAL SOCIETY.—The Nottingham and Derby Architectural Society entertained their ex-Service members to a complimentary dinner at the Exchange Hall, Nottingham, on February 24. The president, Mr. H. G. Watkins, presided over a company numbering about seventy, and Mr. A. Eaton was in the vice-chair. Proposing "The Memory of the Fallen," the President said the society had to mourn the loss of five of their members—Captain N. H. Pratt, Lieut. E. H. Brown, Lieut. W. Smith, Lieut. K. V. Weston, and Sec. Lieut. J. H. Wilson—and three former members, Messrs. W. L. B. Leach, R. E. Hemingway, and C. Gascoigne. There was no better epitaph than the message sent by the King to the relatives of all the fallen. That society had seen to it that the names of their members were not forgotten, and he hoped the city would do likewise. The toast was honoured by the members standing in silence. In giving the toast of "Our Returned Colleagues," Mr. Watkins read a message from the president of the Royal Institute of British Architects, joining with the Nottingham society in congratulations to the victorious survivors, and their tribute of respect and gratitude to those who had fallen. He also sent hearty good wishes to the society for the great work of uniting all architects in a solid and powerful organisation. It was quite time the profession blew its own trumpet, declared Mr. Watkins, because it was not yet known to the general public what their honourable profession suffered during the war. At the outbreak of the war, first of all, the young members joined up. Next, all building work gradually came to a standstill, until finally the Government put an absolute "lid" on the profession by practically stopping work altogether. Then, as if adding insult to injury, the Government absolutely ignored, in all building matters, the one profession trained to deal with such matters, and by their action cost this country many millions of money, in placing great building schemes in the hands of those who were not qualified to deal with them. But the difficulties of those at home were nothing compared with the sacrifices made by those who fought. To their returned colleagues they owed an undying debt of gratitude, and extended a hearty welcome. Although the society was not numerically a large one—about 110—45 members and associates served—(hear, hear)—a very fine record. Practically the whole of the Service members had been

traced, and everyone had had an invitation, including one at Singapore. Several had been grievously wounded, and the following decorations had been gained: D.S.O., two; Legion d'Honneur, one; M.C., four; Italian Croix de Guerre, one. That was a record of which the society might well be proud.—Major T. C. Howitt, D.S.O., Legion d'Honneur, whose name had been coupled with the toast, declared that the secret of our success was that we "made the best of the show," through bad times and good ones.—Captain G. E. King, Indian Army Reserve, responded for the junior ex-Service members.—Lieut.-Colonel A. W. Brewill, D.S.O., who was not able to be present until late in the evening, was also called upon. The *esprit de corps* in the battalions at the front, he declared, was only equalled by that amongst the architects at home. He told a good story of a Robin Hood who had sixteen attempts before he could pot a German sniper, and who, on raiding the trench that night, found in the sniper's nest sixteen dead Germans, each shot through the right eye. The health of "The Visitors" was drunk on the call of the vice-president, Mr. A. Eaton. Acknowledgments were made by the Mayor of Nottingham (Councillor J. Morris), the vice-president of the Royal Institute of British Architects (Mr. A. W. S. Cross), and the president of the Nottingham Law Society (Mr. J. A. Simpson). On the subject of the rebuilding of the Exchange and the extension before long of the Guildhall, the Mayor said a very large extension of the latter was desirable in the interests of economy. Proper plans would be made, and the job done as it ought to be done if the members of that society were consulted. The time had arrived when it was up to the architects to show the city how to build houses a little cheaper. The Corporation were pledged to build 3,300 houses before July, 1922, and about 500 were in hand. What the financial condition of the Corporation was going to be when these 3,300 houses had been put up at the present rate he did not know.

THE SOCIETY OF ARCHITECTS.—An ordinary meeting of the Society will be held at 28, Bedford Square, W.C.1, on Thursday, March 11, at 8 p.m., when a paper entitled "Thoughts on Economics in Relation to the Present Crisis" will be read by Sir Ambrose Poynter, Bart., F.R.I.B.A. (Member). The discussion of the paper will be opened by the senior Vice-President, Sir Charles Ruthven, O.B.E., F.R.I.B.A.

THE ARCHITECTURAL ASSOCIATION OF IRELAND. The Year-Book of the Architectural Association of Ireland, besides the usual contents testifying to the continued progress and activity of this vigorous society, is full of interesting matter. There is a portrait of Mr. George F. Beckett, F.R.I.A.I., the President, who also filled the chair in 1909-10, and of whose successful career a summary is given, and who with his recently-admitted partner, Mr. C. A. Harrington, one of the Association's busy hon. secretaries, in the recent Dublin urban housing competition won the first prize for designs to solve a very pressing metropolitan housing problem—how best to convert the large residences of former eras into decent self-contained dwellings. There is a full report of the address of the last President, Mr. Martin J. Burke, F.S.I., delivered at the opening of the session of 1918-19; a full list of meetings, excursions, prizes, etc.; and a satisfactory balance-sheet and capital account. We note also that the Association has a good museum of building materials and appliances, a most desirable adjunct, which we have many times suggested might well be inaugurated by our own London societies to the mental profit of all concerned.

The Records Committee of the London County Council propose to place a tablet on 83 Curtain Road, to commemorate the site of "The Theatre," Shoreditch, which was the first building erected in London specially for the performance of plays.

The announcement made last week elsewhere that Mr. Ernest Newton, R.A., was about to undergo a second operation has, fortunately, proved incorrect, and we are glad to learn that progress towards recovery is being made, the attack of influenza having been overcome.

Our Office Table.

According to a recent patent by the Grimston Tyres, Ltd., The Camp, St. Albans, Hertfordshire, and J. F. Cooper, Ivy Cottage, Port Vale, Hertford, india-rubber paving slabs or tiles are formed with a wearing surface of soft rubber composition and a foundation of hard rubber composition. The tiles may comprise a plurality of layers varying in hardness from top to bottom, and the bottom layers may be formed wholly or mainly from ground waste rubber, e.g., comminuted solid tyre; or the whole of the tyre may be formed from waste such as old tyres, and the base portion may be formed from a mixture of five parts of ground rubber waste with two parts of sulphur, and the top layer of ground rubber alone.

An enactment of the Assembly of Pennsylvania, signed by the Governor, provides for the examination and registration of architects by a State Board of Examiners, to consist of five architects, each of whom must have had ten years' or more experience in active practice. They serve for a period of five years, with a per diem allowance for expenses for meetings and examinations. All persons not engaged in the practice of architecture or known as architects at the time of the passage of this Act must submit to examination and be registered by the Board of Examiners before being allowed to practise. The board may accept as sufficient evidence of competence a diploma from an architectural school and a statement that the architect has had three years' satisfactory experience with a reputable firm of architects.

One has heard of bricks being used to speed the parting guest on various occasions—usually where there has been a difference of opinion during the visit. To invite guests with bricks, when one is doing so in all good faith, is a new idea. However, it was done, and the party turned out to be a great success. Each one of the bricks was wrapped in brown paper and sent out as dinner invitations, via parcel post, by the Campaign Committee of the American United Building Campaign Fund. As a result of their efforts in this and other ways, \$10,000,000 was raised.

The unsightly wooden telephone booths appearing along the tracks of electric railways will before long be replaced by concrete ones. A new design has recently been brought out by a Chicago manufacturing concern, who are making use of concrete in the construction of them. The booths are made in three sections, body, base, and top, and are thus easy to transport from one place to another, and are said to be lighter in weight than most booths. Electrical telephone connection is such that the locking and unlocking of the door automatically cuts out and cuts in the telephone. Provision is made within the booth for a wooden shelf upon which to place the telephone. Upon the floor is placed an extra wooden floor lightly insulated to act as a positive means of insulation. A panel in the door provides for sufficient light while telephoning. The concrete booths are fire proof, not easily broken into, and are comparatively permanent.

"Laxton's Price Book for 1920" (London: Kelly and Co., Ltd.) is, as usual, up to date in all respects. Attention, of course, is directed to the difficulties which attend the quotation of prices for nearly everything, in view of the rises in wages and material, but evident care has been taken to render these as accurate as possible. A short review on reinforced concrete is given under the head of fireproof construction. Several Acts of Parliament and the regulations referring thereto have had to be withdrawn owing to the scarcity of paper, which is more or less crippling all of us, but they will be issued as a supplement to any readers requiring them.

The House of Commons on Wednesday discussed a vote of £213,000 for new Inland Revenue buildings in Manchester. It was objected that now, when houses for the people were needed, was no time to be building new Government offices. Among the alternative suggestions volunteered were

"Put 'em in the cellars," "Work harder," and "Use up the war huts," and others, such as a simplification of income-tax law and the translation of official jargon into decent English. Sir Alfred Mond had promised the day before to consult Dr. Addison on the effect of this building on the provision of houses, but when he said that he had seen Dr. Addison that morning and that he didn't mind, the Commons reflected, and there is to be no building until the matter has been before the House again. Mr. Bonar Law's vague threat that if the House didn't trust the Government it had better get another, was mere bluster; but when someone called out, "Did they trust them at Paisley?" the reply was, "Yes; perhaps some opportunity will be given to see generally what the situation is, but not immediately."

The rebuilding of Regent Street, which is almost entirely Crown property, is already begun, and will proceed as the Crown leases fall in. In reply to a question by Sir Arthur Feil in the House of Commons on Wednesday, Sir Arthur Griffith-Boscawen said that the Commissioners of Woods did not consider that the buildings were as high as the breadth of the street would permit without serious damage to the light and air of the street, and it would be impossible to satisfy the business requirements of tenants and to obtain the full ground rents which the property was worth without allowing rebuilding to be carried to the height of the new buildings. None would exceed the limit prescribed by the London Building Acts. As regards the Quadrant, a committee of eminent architects had advised that the height must be regulated so as to conform exactly with that of the Piccadilly Hotel.

PARLIAMENTARY NOTES.

INCREASED RENTS.—Dr. Addison, Minister of Health, replying last Monday to Major Lloyd-Greame, who asked whether, in view of the fact that the Increase of Rent, etc. (Amendment) Act, 1919, expired on June 30 next, an assurance could be given that a full statement of the policy of the Government would be made before next Lady Day, said: The Government are fully alive to the fact that if the Acts are to be continued, it will be necessary that legislation for this purpose should be passed before June 30, and the Committee which has been appointed to consider this question, and is already at work, is well aware of its urgency. Major Lloyd-Greame asked whether the right hon. gentleman was aware that a very large number of notices to quit would be given before next Lady Day, and that both landlords and tenants must know before next Lady Day what the policy of the Government was. Dr. Addison: We hope it will be possible to announce it before that time. Mr. MacVeagh: Who are the members of this Committee, and how many landlords are there on it? Dr. Addison: I cannot say.

Sir A. Yeo asked whether the terms of reference to the Departmental Committee on the Rent Restriction Acts cover the cases of rents of shops and offices. Dr. Addison said the terms of reference were sufficiently wide to cover the cases to which his hon. friend referred. Sir A. Yeo asked whether he would immediately consider this question, as rents were being raised from £300 to £1,760 a year. Dr. Addison: We are doing so now. Sir A. Yeo: Get on with it.

GOVERNMENT TIMBER PURCHASES.—In written replies Mr. Bridgeman states that the total amount paid by the Government in respect of purchases of standing home-grown timber to January 31, 1920, is £5,504,000, and the outstanding liabilities are £119,000, as ascertained at that date. The quantities of sawn and planed goods purchased by the Government in the following countries since the Armistice and the basis prices per standard (f.o.b.) are:—Canada, 383,000 standards, £16; Sweden, 120,000 standards, £22; Norway, 21,000 standards, £24; Finland, 9,500 standards, £19. These purchases were made over the period November 11, 1918, to March 31, 1919.

Sir Tudor Walters, M.P., F.S.I., will attend at the Surveyors' Institution at 3 p.m. on Wednesday, March 10, to explain on behalf of the Ministry of Health the regulations under the Housing (Additional Powers) Act, 1919, which govern the granting of the subsidy to private builders. Members and others interested are invited to attend.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House.

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OUR ILLUSTRATIONS.

Royal Institute of British Architects' Silver Medal prize drawings, St. Paul's Cathedral. The West

Towers, measured and drawn by Mr. Arthur F. E. Poley, 1920.

Bungalow, Great Buckland, Luddesdown, Kent. Exterior and interior views, plane elevations, and sections; also sheet of details from the working drawings. Mr. Maurice S. R. Adams, A.R.I.B.A., architect.

Currente Calamo.

We are glad to know that the Council of the Royal Institute of British Architects has determined to take an important step towards the unification of the profession and the question of Registration, and has unanimously adopted a Report of the Charter Committee, which will be submitted to a General Meeting to be held at 9, Conduit Street, on Monday, March 22, at 8 p.m. In view of the time that has elapsed since the mandate of the General Body was given and the wider outlook now apparent, the Charter Committee recommends that the Council should summon a special general meeting at an early date with a view to obtaining sanction for the Council to prepare and present for the consideration of the profession a more extended and comprehensive scheme than that covered by the resolution of 1914. If this proposal is approved, the Committee suggest that the Council should, also with the sanction of the general meeting, appoint a committee representative of the whole profession to prepare such a scheme as is indicated above. This committee should be composed of representatives of the Royal Institute of British Architects, the Allied Societies in the United Kingdom, the Architectural Association, the Society of Architects, the Official Architects' Association, the Architects' and Surveyors' Assistants' Professional Union, and architects not belonging to any professional organisation. The Council, as above stated, having adopted the report, the following resolution will be submitted to the general body of members on March 22:—(1) "That this general meeting of the Royal Institute of British Architects approves of the Council's proposal to prepare and present for the consideration of the profession a more extended and comprehensive scheme than that covered by the resolutions of 1914." (2) "That this general meeting of the Royal Institute of British Architects approves of the Council's proposal to appoint a committee representative of the whole profession to prepare such a scheme as is indicated in the report of the Charter Committee, dated February 20, 1920." We trust the proposed Committee will be a fully representative one,

and that its deliberations may result in a scheme that may command the fullest support of the whole profession.

"Unmitigated, unqualified, unabashed theft," was Sir Philip Pilditch's description of the Bill to amend the Acquisition of Land (Assessment of Compensation) Act, 1919, which was most righteously rejected by the House of Commons last Friday by 137 votes to 34. Sir Philip Pilditch, who deserves the hearty thanks of his professional brethren and all other honest people for his merciless analysis of the Bill, riddled the proposal as unnecessary, unjust, and impracticable, and tending to lead to gambling in land. He defended the existing law, by which an owner could not get more than a fair price for his land. The Bill was not nationalisation, but something worse: a view with which Mr. Pretymann entirely agreed. That a piece of land should be compulsorily taken away at a fractional part of its value, he said, was not justice. When the Attorney-General stated the views of the Government, he insisted on a fair price being paid for land taken for public purposes, and a fair price he interpreted as the amount obtainable in open market at the hands of a willing seller. In some cases, he pointed out, thirty times the annual value, as proposed under the Bill, would be too little, and in others far too much. The suggestion of giving back to the community what the community had created amused him mightily. What, he asked, was the "prairie value" of a doctor, a dentist, or a lawyer? Under the proposed Bill a fair price could only be reached by accident. For once the common sense of the House was equal to the task of rejecting one of the most fantastic and futile bits of "Land Reform" ever submitted.

We trust every reader will drop a line to his member of Parliament, asking him to be present in the House of Commons next Tuesday to support Colonel Pretymann's motion urging the appointment of a Royal Commission to investigate the incidence of the law relating to trade unions and the "working of the Trades Disputes Act of 1906." Since the passing of this Act enormous changes have taken

place in the industrial conditions of the country, and the object of the Commission will be to inquire whether a revision of the Act would not ensure more equitable working between employers and employees, and a possible improvement in the position of the middle classes. At present, in almost every trade the middle-class man is harassed beyond endurance by the daily disputes between employer and employed, to which he is no party, and to repeated lightning strikes which paralyse industry to an extent which means diminished production and the open door to the alien competition which will very soon drive British goods out of the home and foreign markets, and bring about a wave of depression only too likely to throw millions out of work, and bring about riots only too likely to be attended by violence and bloodshed.

Landlord's property tax has been a frequent figure in the courts and a good friend to the lawyers. The Duke of Beaufort's case, decided in 1913, ruled that the person paying this tax who omits to deduct it from his next payment of rent has no right to deduct it subsequently. But now there is the Income-tax Act, 1918, which in Sec. 211, Sub-sec. 2, provides that any person liable to pay any rent shall be authorised to make any deduction on account of this tax which he has failed to make on the occasion of the next payment of rent. To a man of business these words would seem intended to wipe out the above-quoted decision and to allow a tenant to deduct the tax he has paid later on. Indeed, the section goes on to say that if there is no future rent out of which it can be taken, the tenant can recover it from the landlord as a debt. The effect of this Act was considered in the recent case of "Hill and Others v. Kirshenstein and Others" by Mr. Justice Darling. These plaintiffs sued for a year's rent, which was not disputed; but defendants pleaded as a set-off a sum made up of property tax for twenty years which they had omitted to deduct. Faced with the Act of 1918, the Judge said that certainly the words were "extraordinarily wide"; but he could not hold that they made such a "revolutionary change" in the law as they seemed to do. So he held that the defence failed, and on the leading authority above noted he gave judg-

ment for the plaintiffs. A stay of execution was granted pending an appeal, which will be watched with general interest. After all, the law meant the tax to fall on the landlord; while even an Income-tax Act of 1918 must mean something? But judges often prefer old cases to troublesome new statutes, which are so unsettling!

The congestion of timber imports at Hull is daily growing worse and worse, in spite of the bland assurances of the Minister of Transport last week that "every effort is being made" to reduce the local stocks before the export season begins. On his recent visit Sir John Barron was told that over one hundred thousand tons were still in Hull yards. While the most urgent demands are being made from country builders inland, from lack of wagons Hull merchants are unable to deliver the goods. Importers complain that no extra wagons are being sent to Hull. They are not being utilised by railway companies to clear away the mass of wood now so much needed in the work of building. On Monday last the Hull importers had an interview with the deputy general manager of the North-Eastern Railway, and during the past week Mr. T. Allen, president of the Hull Chamber of Commerce, sent the following telegram to the company: "Timber situation more serious than ever; imperative for special allocation of wagons to be made for timber traffic only. Grave danger of men leaving for other employment; which will imperil not only present but future general working of the timber trade in port of Hull. Yards are now completely blocked with wood, which should have been cleared months ago. Timber season is on the eve of opening, as Baltic navigation will soon be open again, and with yards blocked to overflowing with timber that should have been cleared months ago there is no accommodation for fresh stock after first imports have arrived unless more wagons are allocated to the port." Unless something is done scores of housing schemes will be held up indefinitely, to say nothing of ordinary building.

The contrast between the munificent wages of the munition workers and the 2d. an hour which is considered ample remuneration for the inventor whose brain conceived one of the shell-filling machines is of a piece with the "economy" which is still finding snug jobs for people with a pull, while the demobilised soldier is left to starve or drag out his life homeless. Mr. M. H. Moulton, giving evidence last Monday before the Royal Commission on Awards to Inventors in respect of a shell-filling machine, said that when he applied to the Munitions Invention Department for reward he was told that as he had been given 2d. an hour increase in wages and the British Empire Medal no further payment could be made. The 2d. an hour was paid after the invention had been in use for eleven months.

AMERICAN HOME SCHEMES.

The pamphlet issued by the president of the F. W. Dodge Company, of New York, which we briefly noticed last week just as we were going to press, contains a good deal of information about the means by which the great Republic seeks to encourage the making of homes, and not mere housing schemes. The immediate causes of present American house shortage were, of course, much the same as here, except that the American Government was not indebted to the stupidity of any such taxmaster as Mr. Lloyd George, who shut down private building here in 1909-10. There, as here, war restrictions limited transport, fuel, and the allocation of men, material, and capital, but there—as not here—two days after the armistice was signed, all restrictions, save as regards finance, were removed. There has also been a regrettable increasing tendency towards tenantry, increased by the influx of foreigners. While in France but 20 per cent. of her people are mere tenants of their houses, as the great majority of house-dwellers are here, the percentage in America has risen from 52 per cent. in 1890 to nearly 60 per cent. to-day, and, in the words of the noted landscape architect, Frederick Law Olmstead: "The characteristically American impulse toward the making of a permanent home for the family in a place of its very own, while still very strong and very general, appears to be losing rather than gaining among the people of small means."

For nearly eighty years the United States has followed a programme that has never deviated from the idea that beneficiaries of legislation should be enabled to acquire property through their own labour. These laws have covered rural homes and culminated in the Farm Loan Bank Bill. It is now proposed to extend this principle to the acquirement of urban homes, and the Calder, Nolen, and Hill Bills pending in Congress have this end in view. The widest possible division of land and real estate brings about its greatest possible development and conservation, increases its tax-paying power to the State and its earning power to the population, and furnishes a most effective incentive for bringing out the full latent energy of the population.

The first Redemption Law was enacted in 1841, and contained all the elements that made the later Homestead Law so notable. Subsequent enactments were as follows:—Act of 1843 amending the Act of 1841 to prevent fraud; Act of 1853 extending pre-emption to reserved sections of railroad grants and allowing payments to be made in soldiers' land-grant warrants; Act of 1854, granting all rights of pre-emption to bona fide settlers of railroad lands.

The Act of 1862, known as the Homestead Law, allowed every citizen over twenty-one who was the head of a family to take up either 80 or 160 acres of surveyed public lands upon the payment of 1.25 dollar per acre, except in certain Southern States, where 40 to 80 were the limits. The conditions of the law required actual residence and certain work to be done for a prescribed period. Title passed at the end of five years, but the land could not be sold for debt contracted prior to the entry of claim, nor could the settler sell until he had gained title. The Act of 1864 allowed soldiers to file proofs of claim if in service; the Act of 1866 put the exempted land in Southern States under the provisions of the Homestead Law; the Act of 1874, known as the Timber Culture Law, by which the homesteader obtained title at

the end of three years, if for two years he had one acre planted with trees for each sixteen acres of his holding. Other legislation is the Act of 1877, known as the Desert Land Act, relating especially to irrigable lands, the Act of 1878, relating to stone and timber lands, and the Kincaid Act of 1904, also relating to irrigable lands.

The Farm Loan Act of July 17, 1916, made it possible for farmers to borrow money from a specially organised Federal banking institution for the purchase and development of farming lands, the necessary money to be obtained by the banks from the sale of tax-exempted bonds. The Calder, Nolen, and Hill Bills provide for the lending of money to people who desire to build their own homes, the money to be supplied through a Federal banking institution especially created for that purpose, the money to be procured by the banks through the public sale of bonds secured by real estate mortgages of the individual borrowers and guaranteed by the building and loan associations or other banking institutions with which the borrowers were doing business. The object of these Bills is to provide a maximum loan compatible with security at a minimum interest rate for a long-term period, thus freeing the intending home-owner from the expense of frequent renewals, commissions and bonuses. A Bill has been drafted to give the Federal Reserve Board power to direct the lending of the savings deposits of national banks into long-term rather than short-term channels. This would make some two billion dollars available for home building. The McLaughlin Bill now before Congress proposes to exempt the returns from small holdings of real estate mortgages from the income-tax. The Tinkham Bill, also before Congress, provides for a clearing house of information on proper housing and construction methods, and is designed to generally foster the building industry.

During the months of January, February, and March, 1919, the activity of the building industry was promoted through an educational campaign by the U.S. Department of Labour, and during the months of April, May, and June the construction of public works was encouraged by the U.S. War Department.

Besides the action taken by the Federal Government, several of the States have in time past made efforts to aid people in securing homes. The State Land Bank Act of New York provided a means whereby the assets of the building and loan associations of the State were made available for new loans to be expended on dwellings. Although this bank had functioned but three years, at the outbreak of the war it had issued bonds to the extent of \$700,000, which had been taken up by savings banks as a gilt-edge investment for their funds. The imposition of a Federal tax on the income of these bonds killed their use and prevented the sale of similar issues. Thus the war activities of the Federal Government cut off this source of aid to the home builder.

In the matter of municipal housing, New York City has always been in the van. Although the word "tenement" does not appear in the records until 1862, it is evident that the problems which the tenements represent run back for at least a century, as in 1827 the physicians of New York City complained of the crowding and unsanitary conditions existing in certain parts of the city. In 1834 Dr. John G. Griscom issued a report on the housing conditions. In 1846 there was an attempt to inspire pri-

vate enterprise to improve conditions through competitions in plans for model houses. Conditions, however, grew worse just prior to the Civil War, and at its close New York City experienced a building shortage, as recorded in the *Record and Guide* of March 21, 1867. In parts of the city the rent of stores and offices rose 100 to 150 per cent., while "as for dwellings, not more than one-fiftieth of the applicants can be supplied."

In 1885 an efficient tenement housing law was enacted which, with later legislation, has made New York City the most healthful of great cities. During the past year special committees appointed by the State Legislature, the Governor of New York State and the Mayor of New York City, have been considering the housing shortage, but the action of none of them has so far increased the supply of housing. The Jesse Bill now before the New York Assembly proposes to exempt from increased assessment until 1926 all property improved for dwelling purposes.

The death-rate among children is said to be the measure of the sanitary condition of the community. New York reduced the mortality from an average of 167 for the five years ending in 1905 to 94 in 1914 for each one thousand births.

Massachusetts has perhaps gone farther than any other commonwealth in its aid of housing schemes. To this State belongs the distinction of having appropriated the first money to be used in bettering the conditions of the workers. Money was made available in 1917, which was the culmination of an agitation begun in 1908, due to the increase in infant mortality. While there were 134 deaths of children under one year to every one thousand births throughout the State, in Boston the rate was 149, reaching, in crowded Lowell, the high figure of 202.

Among the most important factors in the housing situation in the United States are the mutual building and loan associations, originally started in Pennsylvania some seventy years ago, and which now have 7,484 branches throughout the United States and 4,011,401 individual members. They hold assets to the extent of nearly two billion dollars and do a business of upwards of one billion four hundred million dollars annually. Through careful administration and the practice of the amortisation plan, in which they were the pioneers, loss is practically unknown. The cost of their operations is about three-fourths of 1 per cent. The amount of their loaning capacity, however, is limited to their weekly receipts from the savings of their members. Passage of the Calder, Nolen or Hill Bills would permit them to borrow on their mortgages and make available large sums for home building, which experience has shown should be administered locally without governmental intervention or expense.

The "Own Your Own Home" campaign, initiated before the war, by community effort, was revived by the U.S. Department of Labour during the spring of 1919, and has been active throughout the country during the year. It has been incorporated by the Y.M.C.A. into its National Thrift Week movement, one day—that of January 20, 1920—being given up to considerations of home-owning. The American Federation of Labour, at its convention at Atlantic City last fall, passed resolutions favouring home ownership.

Most of the construction development that has taken place in America is, after all, the work of the private builder—the

man who is seeking gain. It is said to have been the activity of the speculative builder that has made Philadelphia the city of homes. It is the desire for gain that has brought about the exceptional housing conditions around many of the great industrial plants, some of which, such as the one at Akron, Ohio, are very wisely financed. It is this motive of gain that has created the Mills Hotels and similar dormitories where working men and women can live in comfort and cleanliness and within their means. This motive has led to the establishment of favourable housing conditions in England, such as Port Sunlight, Bourneville, and Golder's Green, Hampstead.

Scarcity of production and lack of energy of the workers are due to lack of proper economic and moral incentive. Rent subsidy, minimum wage and the unemployment pension do not furnish an incentive for the exertion of energy by the workers. High wages without increased production do not raise the standard of living. The incentive of wages alone is not sufficient to call forth latent energy. In Great Britain 30 to 40 per cent. of this energy is latent, and probably as large a proportion is latent in the United States.

It is a fact that the ownership of property and the participation in its development and increase in value has called forth the energy of labour in the United States. In the "Forties" the Homestead Laws of the United States were in their formative stages. They gave away land; men worked on it and created communities; the communities created powerful States, and the States have made the United States a powerful nation. Had the United States followed the example of England in rent subsidy and philanthropic legislation, it would probably be a subject nation to-day. Had England, when it began its series of Governmental interferences in 1851, entered upon a policy of wider division of property, it would not have gone into the war with but 15 per cent. of its land under cultivation and emerged from the war with an industrial crisis. The British method killed private initiative, drove capital from the field of investment and made a bad social system worse. Landed interests, by dividing portions of their holdings, might to-day hold the remainder at higher values, while the country might to-day be in a condition of hope and energy through possession of property, in the increasing value of which the citizen, as well as the State, would be sharers.

COMPETITIONS.

HOUGHTON-LE-SPRING SECONDARY SCHOOL COMPETITION.—The conditions of this competition have been amended, and are now in accordance with the regulations of the Royal Institute of British Architects.

HOUGHTON-LE-SPRING SECONDARY SCHOOL COMPETITION.—The conditions of this competition having been amended, members of the Society of Architects are hereby notified that they need no longer make application to the Council before entering for the competition.

Mr. J. Bromley, Secretary of the Locomotive Engineers' and Firemen's Union, speaking at Kettering last Sunday night, said he had it on what was to him unimpeachable authority that France was receiving payment from us for damage done by our troops in building trenches during the war, trenches built to save France from ruin, and also for damage done by our aeroplanes travelling from this country to Paris. That was, he said, where M. Clemenceau had proved too clever for the Welsh wizard.

Our Illustrations.

ST. PAUL'S CATHEDRAL, WESTERN TOWERS. R.I.B.A. SILVER MEDAL PRIZE DRAWINGS, 1920.

Last week we gave a double page of the west front, showing also the Dome. We included a plan of the Cathedral. To-day we reproduce Mr. Arthur F. E. Poley's drawing of the upper part of the western towers, including the clock. The lower part of the same tower will be published at an early date.

BUNGALOW, GREAT BUCKLAND, KENT.

"Little Gables," a week-end cottage built at Luddesdown, was designed for personal use by Mr. Maurice S. R. Adams, A.R.I.B.A., of 1, Fore Street, E.C. The house occupies the crown of a steep hill on an open site of four and a-half acres, screened from the north-east by a beautiful copse on rising ground. The garage, planned also for use as a coach-house and stables, is built at the foot of the site with a direct entry into Wrangling Lane. The contrivance of this new bungalow is unusual, inasmuch as the vertical walling is reduced to a minimum. It has one long tiled roof and a big living-room, or parlour, which has cupboards right and left and a brick-built recessed chimney corner spanned by a concrete beam. The design was determined by the exigencies of economic construction, combined with an individual character in harmony with the position of the site on a chalk subsoil. The manner in which the structure accommodates itself to the environment is shown by the photograph taken from the slope of the opposite hill just above the farmstead. The old half-timbered cottage is unrestored, and has no windows except those seen in the picture. The windows of the bungalow are arranged for through ventilation, and on the hottest days the interior is always cool. Being placed on an exposed situation open on three sides to the weather, sheltered windows are available according to the prevailing wind at all seasons. The keeping room is panelled, and a feature is made of the roof timbers, the big purlins being bracketed out and carried clear from end to end, thus giving ample head-room to the continuous dormers on both sides, well commanding the prospect. The accompanying plans and sheet of working details show how the section is managed. An interior photograph of the sitting-room explains it further. Local materials and local builders were employed. Rain-water storage is provided for by a tank under the paved terrace in front of the cottage.

A useful booklet of 32 illustrated pages on "Electric Lighting in the Home," by Leon Gaster and J. S. Dow, is issued by Sir Isaac Pitman and Sons, Limited, price 6d., which will be helpful to all about to substitute the electric light for any other.

The Stamford Town Council have resolved that thirty houses be erected as an instalment towards the scheme for 200. The Mayor strongly deprecated the threats which he said had been received from the Housing Commissioner at Nottingham, which, he said, should be sent to those who feared them.

The Royal Institute of Public Health will hold its next annual congress in the University of Brussels, Leopold Park, from Wednesday, May 19, to Monday, May 24, on the invitation of M. Adolphe Max, the Burgomaster of Brussels, and the Rectors of the various Belgian Universities. Those wishing to become members of the congress should communicate with the Secretary, 37, Russell Square, W.C.1.

KITCHENS AND BATHROOMS.*

Kitchens and bathrooms have many features in common. Firstly, both should have the walls, floors, woodwork, and furniture finished with water- and steam-resisting surfaces. Secondly, an immaculate cleanliness is the most attractive feature of both. Thirdly, there should be no cracks, seams, holes, intricate mouldings, sharp angles or inaccessible corners or places to collect dust, hold moisture, or form hiding places for blackbeetles and mice; therefore the walls and floor should meet in a curve instead of at a sharp angle. Fourthly, the pipes should be encased in the wall or floor, but in such a way as to be accessible in case of need, the hot and cold pipes being as far as practicable near each other to prevent the latter freezing in winter. The pipes that must be exposed, such as those from the floor, the waste pipes of sinks and lavatory basins, should be of copper, nickel plated, so as to encourage and reward cleaning. The taps should have as nearly as possible an unbroken, or, in other words, a plain surface, as maids have such an unpleasant habit of leaving a little of the metal polish in crevices to prove, what you might otherwise doubt, that they have polished them.

The cult of the bath, the provision of bathrooms or the erection of bath houses, are at once the most ancient and the most modern of things: ancient inasmuch as we have the luxurious example of the Romans and Greeks in this matter; modern inasmuch as the houses of our forefathers had no such thing as a bathroom; and it was not until the middle of last century that public baths were built in this country.

The greatest and most important development in modern times has taken place in England, and has been extending gradually to the Continent, and especially in America. The better water supply of most European cities has aided this movement.

Most of us of the present day, however, have not only become thoroughly accustomed to the idea of a bathroom, but would at once condemn a house which did not possess that shrine of bodily cleanliness. It is funny, however, what strange ideas even in these days some people have as to bathrooms. The other day I was in a Tube train, and two rough-looking ladies were seated opposite me. One of them, with a very fat face and grey shawl, was telling the other with a broad smile of joy that at last she and her 'Enery had been able to find a small house, and had just moved in, and after extolling its merits said, "unfortunately there is no bathroom."

"That's bloomin' awkward," said the other. "Where do yer put yer coals?" I have also heard that baths have been used for storing potatoes.

About thirty-five to forty years ago a friend of mine, one of our great sanitary fittings specialists, Mr. William Shanks, was asked to call at a very big house because the shower or spray of the bath was faulty.

On being shown into the bathroom, he found that the bottom of the bath was covered with turf, and the people kept rabbits there. A little place was arranged for the rabbits to sleep in, and the complaint was that the spray or shower dripped or leaked and disturbed the rabbits!

To-day in every modern house, both large and small, the bath is an essential, and a room separately allotted to it is being strongly advocated with all housing schemes.

The first matter to consider when forming a new bathroom, either in an old house or when building a new one, is its aspect, which should be south-east, or with a window, if possible, in the south-east corner, for the following reason:—

In winter, during the shortest day, the sun rises about S.E.E. at about 7.30 a.m. At midsummer the position of the sun is E.S.E. at 8 o'clock.

Secondly, the bathroom should not be too small, for in these days of "fitness," morning exercises are largely practised, and a bathroom is a convenient place for them. It becomes an impossible place if it is hardly

big enough to "swing a cat in"—much less an Indian club.

Plenty of light and air are most desirable, as adding considerably to the cheeriness of the bathroom. In many houses it is a dark hole, and in very many London flats particularly is this the case.

An accessible window is important, hung to open and shut easily, and nothing in front of it. It is delightful in fine weather to be able to throw the window wide open, with the warm sun shining in, and in the country a beautiful view to look out upon while dressing.

The electric-light switch should be by the door, and the bell-push over the bath in case of sudden illness. As a matter of fact, the switch and bell-push are so placed in almost every bathroom.

There should be very ample room for towels, the rods of glass, supported on nickel-plated or white enamel brackets being the best; or they may be of nickel-plated metal or white enamelled wood, and in every bathroom there should be a hot water towel airer in some form or other, not only on account of drying and warming the towels, but also for the luxury of a warm room in cold weather; in fact, it should be well heated—better than the rest of the house—and the towel airer will do this, assuming that the hot water service is satisfactory.

If funds will not allow of one of the specially designed towel airers, made of copper tube and heavily nickel-plated, the next best thing is to have towel rails formed out of the return hot-water pipe by a coil of say, three lines of piping. If, owing to the out of the return hot-water pipe by a coil of, these off the return pipe, the flow can be used; but whatever form of towel airer is used should be, if possible, taken off the return and back to the return pipe, or off the flow and back to the flow, but it should never be taken off the flow and back to the return, as I have seen done in hundreds of cases, because it upsets the balance of the hot-water circulation directly a hot bath has been drawn off (particularly if there is a hot-water tank above the bath level), and you find you are drawing off cold, while there is still plenty of hot water in the tank. There should be accessible and suitable fittings for soap, sponges, etc., a glass shelf and mirror over the table used for dressing. When the latter are used, a bracket for gas or electric light should be arranged for on each side of the mirror, about 6 ft. from the floor. In small bathrooms this will be found to give ample light; in large ones, a central ceiling light is useful, and one over the mirror above the lavatory basin.

In cases where men use the ordinary razor, as distinguished from the safety razor, a hook or receptacle for shaving-paper should be fixed.

An apparently trivial point, but important nevertheless, there should be good hooks on the door for dressing gowns, etc. Apropos of this, the late King Edward, on one occasion when staying in a country house, said to his hostess: "Would you like to know something that would add greatly to the comfort of your guests?"

"What is that, your Majesty?" she exclaimed, much perplexed.

"A hook on the bathroom door," replied King Edward.

I now come to the principal fittings.

The bath should be porcelain enamelled, and if it must stand on feet, should be fixed to permit of cleaning easily below and all round—only an acrobat can clean under the usual bath placed on legs about 4 in. to 6 in. from the floor. I tried it once myself, and no one can properly or easily clean behind, when bath is fixed 2 or 3 in. from the wall.

The ideal bath should have the same smooth finish of the inside continued on the outside to the base or floor, in an unbroken surface, the back (and one end, if the bath is in the corner of the room) being cemented into the wall, and on to the floor, so that no water or dirt can possibly get there, behind or under, and finished off with a smooth curved line, so that there are no square angles or corners or narrow spaces to collect dirt and dust.

(To be continued.)

Correspondence.

WANTED, AN ARCHITECTURAL BUREAU AND MUSEUM OF BUILDING APPLIANCES.

To the Editor of THE BUILDING NEWS.

Sir,—The architectural bureau was a very great convenience to many architects, and if it had enjoyed a greater recognition I doubt not that it would have been regarded by our profession as indispensable. I was told the other day when I called at Hart Street that the war had swept it away, and no one knew when, if ever, it would be reopened.

I write now to suggest that a similar bureau should be started by the Royal Institute of British Architects, and that a committee of its members be appointed to allot space to the manufacturers and merchants for the purpose of exhibiting their wares. The committee should meet at regular intervals to select the latest and best examples. Manufacturers would, doubtless, pay substantial rents for space. And the honour of having goods approved by a committee of the R.I.B.A. would, I think, tend to the improvement in manufacture. And architects would often meet each other and compare experiences of the several exhibits freely without fear of the law of libel. We should be saved the trouble and worry of storing heaps of unsightly samples, and tradesmen would be saved the expense of sending them out. The museum, if under the auspices of the Institute, would come under the notice of the whole profession without any elaborate advertising, and would surely be a guarantee to the public if the committee was elected annually and unpaid.

I trust you will assist in bringing this suggestion before the profession.—Faithfully yours,

C. F. A. VOYSEY.

78, St. James's Street, S.W.1.

[We have many times suggested the revival of some such feature. The old "museum of building appliances" which flourished in the sixties of the last century under the guidance of Mr. D. O. Boyd and his efficient manager, Mr. Gray, in Maddox Street, with ingress from the R.I.B.A. premises, was a most useful institution. It was really a permanent building exhibition, and afforded buyers daily opportunities which a fortnight's inspection once a year or two years does not supply.—Ed. B.N.]

While the roof of some business premises in Archway Road, Highgate, was undergoing repairs it suddenly collapsed, pinning two workmen underneath. Members of the fire brigade rescued the men, who were taken to the hospital.

The Department of Overseas Trade is organising an exhibition of timbers grown within the British Empire, to take place at the Holland Park Skating Rink, London, from July 5 to July 17, 1920. The main object of the exhibition is to display the full range of Empire-grown timbers. At the same time the exhibition will demonstrate the chief uses for which such timbers are suitable.

It was suggested some little time ago that several neighbouring districts should link up with the Pencoed sewerage system, and thus enable the sewage from the whole to be treated at one spot and the consulting engineer, Major T. J. Moss Flower, of Westminster and Bristol, was instructed to prepare a scheme. It has now been definitely decided that two of these areas will combine, and the engineer has been instructed to prepare the necessary plans, etc.

A screen and cross are about to be erected as a war memorial in Campbell College, Belfast. The cross, of Ballinasloe limestone, 16 feet high, is to be erected in the quadrangle. The other memorial, to be erected in the Central Hall, consists of a screen in Runcorn stone, with bronze name tablets inset which will bear the names of all the old Campbellians who served—585 in number—of whom 119 were killed and 130 gained distinctions. The designs for both memorials were prepared by Mr. J. R. Young (of Messrs. Young and McKenzie), himself an Old Campbellian, who served in the Army.

* From a paper read before the Incorporated Institute of British Decorators.

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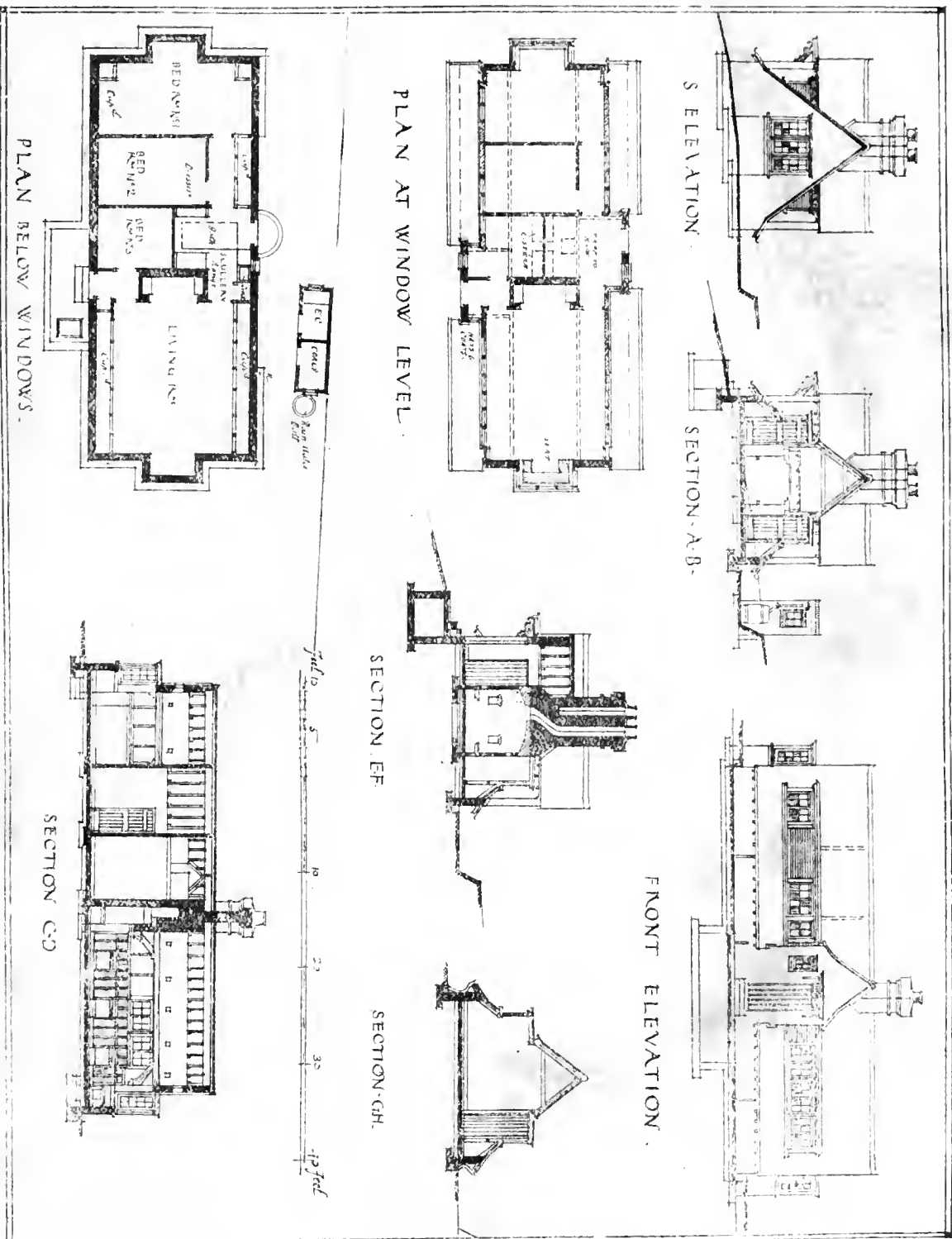


BUNGALOW, GREAT, BUCKLAND, LUDESDOWN, KENT.
Mr. MAURICE S. R. ADAMS, A.R.I.B.A., Architect.

THE BUILDING NEWS, MARCH 12, 1920.



LIVING ROOM, BUNGALOW, LUDDESDOWN, KENT
Mr. MAURICE S. R. ADAMS, A.R.I.B.A., Architect.



BUNGALOW, GREAT BUCKLAND, LUDDESDOWN, KENT.
Mr. MAURICE S. R. ADAMS, A.R.I.B.A., Architect.

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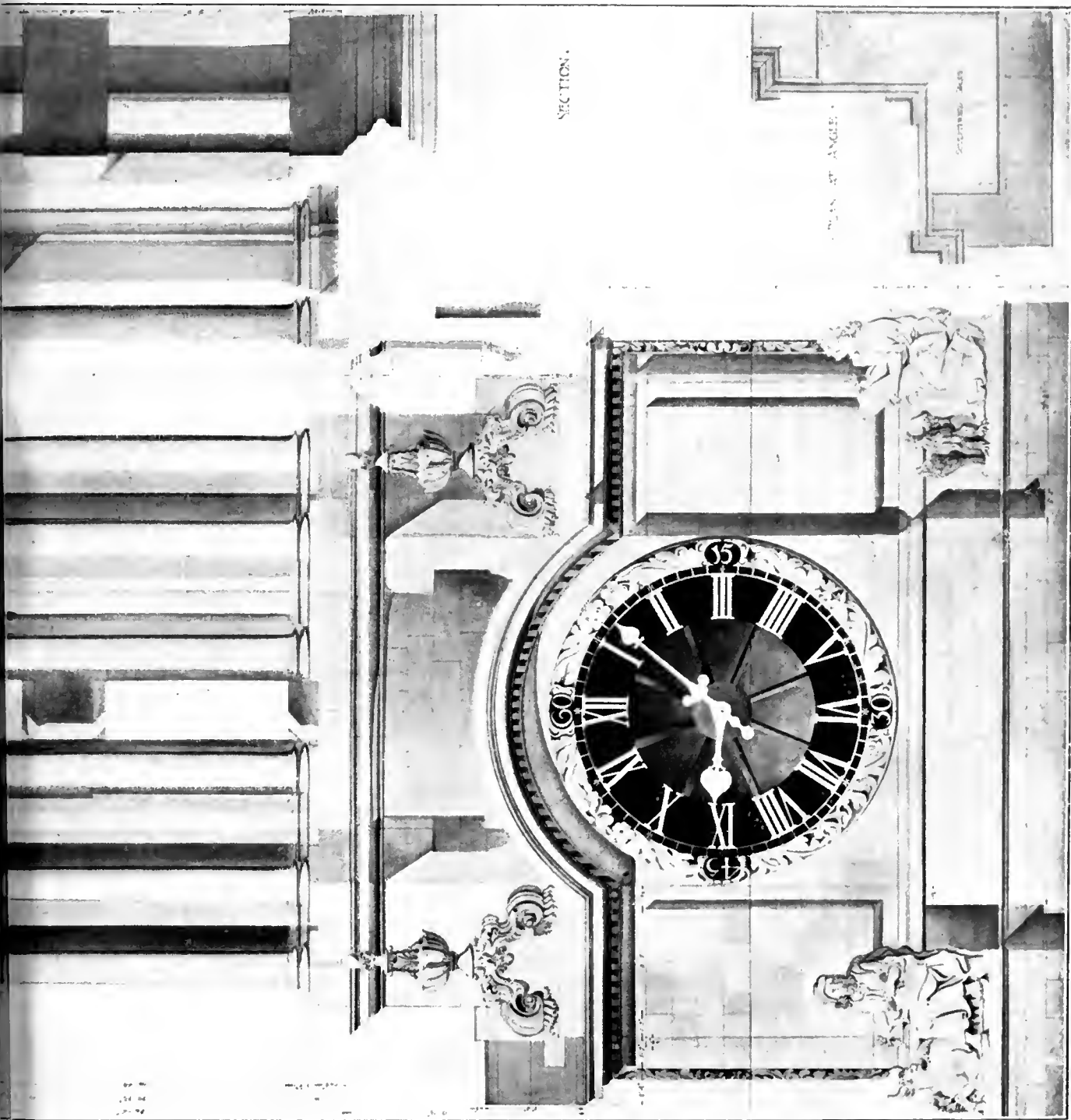
R.I.B.A. MEASURED
DRAWINGS MEDAL

ST. DULIS
CATHEDRAL,
LONDON.

WEST FRONT IN PLAN
OF LOWER PORTION
OF WEST TOWER.

ELEVATION.





WEST TOWERS, ST. PAUL'S CATHEDRAL: R.I.B.A. SILVER MEDAL PRIZE.

Measured and Drawn by Mr. ARTHUR F. E. POLEY. 1920.



PROFESSIONAL AND TRADE SOCIETIES.

ARCHITECTS' AND SURVEYORS' ASSISTANTS' PROFESSIONAL UNION.—The Architects' and Surveyors' Assistants' Professional Union celebrated the first anniversary of its founding at a well-attended meeting at Caxton Hall on the evening of Thursday, March 4. Lord Burnham, chairman of the London Building Trades Employment Exchange Committee, presided, and was supported on the platform by Major Harry Barnes, M.P., F.R.I.B.A., F.S.I., Mr. Barry Parker, J.P., F.R.I.B.A., M.T.P.I.; Mr. Norman Wyld, general secretary, Society of Technical Engineers; Mr. A. G. Cross, F.S.I., hon. secretary Quantity Surveyors' Association; Mr. A. Goddard, secretary Surveyors' Institution; Mr. C. McArthur Butler, secretary Society of Architects; Mr. John Sarvis, Lic.R.I.B.A.; and the officers and members of the London Executive of the Union. The hon. secretary read messages of sympathy with the Union from Mr. Thomas Hardy, O.M., an ex-architect, and Mr. W. J. Locke, late secretary of the R.I.B.A.; also a message of regret from the President of the Institute that he was unable to attend owing to a prior engagement. Lord Burnham, in opening the meeting, dwelt on the justice of and necessity for professional class organisation. It was right that the salary of the professional man should be increased in proportion to the increased cost of living just as much as the wage of the manual worker. He had read with pleasure the little pamphlet setting forth the objects of the Union, and he was glad to see that they were not purely selfish ends, but aimed at the greater efficiency of the assistant. Architecture and surveying were great professions, and he was proud to be able to preside over a meeting of those who followed them. Major Barnes said he wished the Union well, more especially at a time when all hoped for greater unity in the architectural profession, and he was glad to notice among the members of the executive members of the Institute and of the Society working harmoniously together. If at any time he could be of any use to the Union in the House of Commons he would be glad to be so. He understood that the time was already at hand in connection with the Unemployment Insurance Bill. He was on the Committee dealing with that Bill, and he would be most glad to use his influence to remedy, if possible, the details that were objectionable to the Union and other professional organisations. Mr. H. Ascroft, Lic.R.I.B.A., moved the following resolution:—"That this representative meeting of salaried and employed architects, surveyors, quantity surveyors, and technical assistants in their professions and allied thereto, calls on all their colleagues throughout the United Kingdom to stand fast by and to support the only recognised organisation for such, the Architects' and Surveyors' Assistants' Professional Union." Mr. A. W. Sheppard, A.R.I.B.A., seconded. Mr. Norman Wyld, as general secretary of the Society of Technical Engineers, spoke to and supported the resolution. Engineers were like architects and surveyors, men who had undergone long training in the technical sciences. As such, they looked at the affairs of life from a totally different standpoint from those who had not undergone such training. Neither himself personally nor his society had anything but respect for other types of workers, but they felt the manual or clerical worker did not represent them, and that therefore there was very grave danger in societies of technical workers associating on any basis founded on the principle of "one man, one vote." The votes of ten thousand manual workers were not necessarily right against the one vote of a trained expert. He felt that all professional organisations such as theirs, representative of high technical knowledge, should combine, and his society was one of a group already existing for engineering and scientific bodies. He hoped other groups, including the Union, would join with them. This speech caused a little debate, which was ably overruled by the chairman, who declared that he understood the main purpose of the meeting was for organisation and recruiting purposes. He

put the resolution and it was carried unanimously. The honorary secretary (Mr. Chas. McLachlan, A.R.I.B.A.) outlined the work of the Union during its first year to the enlightenment of those present. The London meeting was only one of six, others being held that night in Liverpool, Manchester, Newcastle, Norwich, and Southampton, to which last Mr. Duncan had gone on behalf of the executive. Another was being held on Monday in Sheffield. He paid a tribute to several of the branch workers and stated that the Union owed its Glasgow branch mainly to the efforts of a young man of twenty-one who had not yet completed two years in the profession. There was to be a Convention of the different branches later in the year, so that London and provincial might meet and understand one another. He explained the scheme the Union had in hand for helping the provincial man to complete his education, and briefly touched on the question of federation, the Unemployment Insurance Bill, and the development of the Union, which was a purely craft union. He hinted that after June an entrance fee would probably be charged to applicants for admission. Above all, he appealed to all to join, not for what they hoped to get, but for what even the least of them could give. He hated those who remained not knowing they would also reap the harvest others had sown and tended. The Welfare Committee had held its first meeting, and promised well for the whole professions; the Union seemed as though it was going to be the great unifying factor in them. They wanted the enthusiasm of hard work and sacrifice. There would be battles ahead, and all must be ready to fight. Capt. R. G. Llewellyn Evans, M.S.A., chairman of the executive, proposed a vote of thanks to the chairman, Major Barnes, Mr. Norman Wyld, and Mr. Barry Parker. The resolution was ably seconded by Mr. R. G. Strachan, P.A.S.I., treasurer, and put to the meeting and carried with acclamation. Lord Burnham, in replying, impressed on the meeting the necessity for federating with the right kind of association. Mr. McArthur Butler, secretary of the Society of Architects, proposed a special vote of thanks in a delightful little speech to their hard-working secretary. This was seconded by Mr. J. B. Hector, M.S.A., and Mr. McLachlan, replying, thanked them and urged on all the necessity of their financial support.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.

—The tenth general meeting of the session was held at the Association Rooms, Royal Society of Artists Buildings, New Street, Birmingham, on Friday, March 5. The President, Mr. H. T. Buckland, F.R.I.B.A., took the chair, and sixty members were present. The meeting took the form of "A Talk on Housing Schemes," the chief speakers being Mr. Henry E. Farmer, F.R.I.B.A. (Housing Commissioner for Birmingham and the West Midlands), Mr. W. A. Harvey, F.R.I.B.A., and Mr. J. Crouch, F.R.I.B.A. The Housing Commissioner asserted that architects had not yet impressed the community with a due sense of their value. The public are far from clear as to the functions of architects. Architects are modest and unassuming; having turned their pencils into bayonets, they fought their way through a bloody war; their fighting spirit is well alive to-day, and it is up to them not to lie down and lick their sores, but to be up preaching the gospel until the misunderstandings and doubts are removed, and housing is in their hands, and the people's homes a comfort to live in and a joy to behold. Dealing with various regulations, the speaker said that Section 1 (3) of the Housing Act, 1919, provided for the employment by a local authority of an architect selected from a panel of architects nominated for the purpose by the R.I.B.A. The net result of the Ministry's policy was that 50 per cent. of the housing schemes were in architects' hands. How many, or, rather, how few, houses of the working classes were designed by architects previous to the passing of the Housing and Town Planning Act of last year? The officials of the Ministry

made it their personal concern to see that this was clear to the councils when they were called in. Almost immediately on the site inspection they issued a questionnaire requiring expert consideration, and asked for the architects to accompany them upon the visit. Time and trouble in dealing with the layouts would have been saved if this course had been adopted, and much anguish spared the officials in the filling in of the necessary forms. This did not apply to Birmingham and some other large towns, where an architectural staff was in existence. The Housing Commissioner then gave at some length the gist of the various circulars, etc., issued by the Health Ministry for the guidance of architects, builders and local authorities.

LEGAL INTELLIGENCE.

THE BIRMINGHAM FERRO-CONCRETE ROOF COLLAPSE OF JANUARY 23 LAST.—At the further adjournment of this inquest, a report of the previous two hearings of which appeared in our issue of February 27, Mr. Arthur B. Harrison, F.R.I.B.A., described fully the circumstances by reason of which the accident occurred, and gave it as his opinion that reasonable care and skill had been exercised in the preparation of the designs and plans by Mr. S. N. Cooke, of the firm of Peacock, Bewlay, and Cooke, the architects of the building, and also by Mr. Moritz Kahn, of the Trussed Concrete Steel Company, the designers of the concrete work. Professor F. C. Lea, Professor of Engineering, thought that among several causes the bad condition of the slabs over one of the beams, and the consequent lack of adhesion, were most important. In his summing-up the coroner said no evidence of neglect against the parties concerned had been forthcoming. The jury returned a verdict of "Accidental death," but added a rider that, in their opinion, there was not sufficient technical supervision over the execution of the work. The coroner agreed with the verdict, and said the rider was warranted.

MESSRS. CHANDLER BROS. V. WELSH GARDEN CITIES, LTD.—An award has been made in favour of Messrs. Chandler Bros., road contractors, of Manchester, against the Welsh Garden Cities, Limited, of Cardiff, in the arbitration heard at the Surveyors' Institute, Westminster, in December last, by Major Harry Barnes, M.P., F.R.I.B.A., F.S.I. The arbitration arose out of differences in respect to a contract for carrying out certain work at Stocksbridge, near Sheffield, and the arbitrator has awarded Messrs. Chandler Bros. £2,149 19s. 9d., in settlement of their claim, or, alternatively, for £1,999 19s. 9d. in the event of a legal point in which he has decided in their favour being held to be wrongly so decided. There was a counter-claim by the respondents, but no evidence was called in support of it. The case for the claimants, as set forth by counsel, and borne out by witnesses, showed that in 1917 Messrs. S. Fox, the well-known umbrella frame makers, were erecting 280 to 300 cottages for their workmen at Stocksbridge, near Sheffield, and entered into a contract with the Welsh Garden Cities, Limited, to carry out this work. Respondents sub-let the contract for building the cottages to Messrs. Jones and Co., of Cardiff, and Messrs. William Albert Chandler, and Frederick Walter Chandler, road makers and road builders, of Manchester, were brought in to carry out certain excavation work for road-making. This work proceeded quite satisfactorily, and later, in October, 1917, a contract was entered into for metal-ling, curbing, and channelling the roads. In the contract it was agreed that the respondents should provide a crusher to crush the road material, that they should deliver slag for the roads by the side of the crusher, and that the slag and crushed material should be carried by winch and trucks provided by respondents to the various roads. Claimants' case was that it was the neglect to provide these things that the differences resulting in the arbitration had arisen. In his award the arbitrator found that the claimants entered upon the work, and completed the major portion of it in a workman-like manner, and that the respondents wrongly broke the contract and prevented the claimants completing the work by failing to provide and fix the stone crusher and delivering the slag as provided by the contract; by instructing another contractor to undertake a portion of the work which claimants had contracted to perform; and by failing to afford claimants facilities to proceed with the work. He found that claimants were justified in leaving the work. He found that respondents did not fail

at all material times to give claimants the use of the tram in contravention of the agreement. In regard to damages he allowed claimants £400 in respect of loss of profit on work under the agreement unexecuted by reason of the respondents' breaches of the agreement, and £200 in respect of extra cost of administration through work being delayed by the respondents. The claimants abandoned their claim for £100 interest which was mentioned by the arbitrator, who found against the respondents in respect of the counter-claim. Subject to the opinion of the court upon a point of law, he awarded claimants £2,149 19s. 9d., made up as follows:—Amount agreed upon in respect of four items in claimants' particulars of damage, £569 1s. 10d.; amount agreed upon in respect of three items in particulars of work done, £5,284 17s. 11d.; amount awarded for loss of profit and extra administration (mentioned above) £600—a total of £6,454 19s. 9d. Against this had to be set £4,305 paid by respondent to claimants, leaving the awarded balance of £2,149 19s. 9d. The question of law involved in the hearing was as to the true construction of the contract in reference to the delivery of the slag. He (the arbitrator) had upheld the view of the claimants in this matter, but if the court should decide his view was not the correct one, then, in respect to the sum of £200, he amended it to £50. The total sum awarded would then be £1,999 19s. 9d. He also awarded claimants taxed costs of this reference, and ordered respondents to pay the costs of the award, which he fixed at £141 15s.

Our Office Table.

The Dean of Worcester (Dr. Moore Ede), who has already made considerable progress with the building of two houses as his contribution to the solution of the city's housing problem, is about to start another house in connection with the Worcester garden suburb. This is an enterprise of a local company, of which the Dean is head. The new dwelling is to be a labour-saving bungalow, and when it is complete the Dean will let it to Minor Canon de la Hey, of Worcester Cathedral, who will be homeless after the 25th inst., because his house has been bought over his head. The Dean says there is either deliberate procrastination or gross mismanagement on the part of the city council, which has not yet built a single house. He asks why, if he can build, the corporation cannot do the same?

EX LUCE LUCELLUM.

Poor Dr. Addison, when pressed to say why his great housing schemes have gone agley, Replies, "There are no houses—more's the pity—"
"But, please to note, I've set up a Committee."
To those who now of house and home are short,
Will presently be furnished—a Report!
And how, you ask, will that help housing?
Stay;
'Twill stop a hole to keep the wind away.

—Morning Post.

An appeal is being made for funds for the restoration of Gawsworth Church, an old and interesting feature of the Fytton family, which was sold by Lord Harrington lately. The need is urgent. The entire woodwork on the floor space of the church is infected with dry rot, and the Bishop of Chester has pointed out the special claims of the Gawsworth Church for consideration. In the records of St. Werburgh's Abbey at Chester it is stated that on May 15, 1265, Simon de Whitchurch was elected the thirteenth Abbot. The name is of importance as being attached to the first official record we have of Gawsworth Church—a deed relating to tithes. This was in the reign of Edward I. Certain architectural features of the earliest portion of the building indicate that it dates from the latter part of the eleventh century. The church appears to have been considerably altered from its first form. There are evidences that it was originally constructed with a nave, aisles, and chancel, and the tower is of the time of Edward III. Several shields of old Cheshire families ornament the exterior. The church was last restored in 1851.

The annual general meeting of the Prudential Assurance Company, Limited, was held on March 4 at the Chief Office, Holborn Bars, Sir Thomas C. Dewey, Bt. (Chairman of the Company), presiding. The Chairman said no one could fail to be struck by the amazing vitality shown in each page of the report. Ten years ago the average premium per week of the new industrial branch policies issued was 2.45d., five years ago it was 2.88d., and last year it was 7.02d., that is to say, the average premium per week in 1919 was nearly three times as large as it was 10 years ago. The total income of the Company was £24,560,020, which is greater than the pre-war revenue of more than half the European Governments. Of this amount, interest accounted for £5,084,584, which is about equal to the pre-war revenue of Bulgaria, and the premiums received totalled £18,876,389, which is greater than the pre-war revenue of Switzerland, Greece, and Norway combined. In the Industrial Branch the premiums received amounted to £11,155,874, an increase of £1,419,471 over 1918. The annual premiums receivable on policies in force at the end of the year were £12,515,332, an increase of £1,799,766 over the previous year, which was £1,104,462 in excess of that for 1917. In the Ordinary Branch the number of policies issued during the year was 138,037, the sum assured under these policies was £22,319,642, and the new premium income was £1,639,762. In the Ordinary Branch the total amount of claims for the year was £5,425,526, of which £1,625,266 was on account of deaths, £3,642,129 was paid on maturity of endowment assurances, and £158,131 was allowed by way of surrender values. The total claims paid in the Industrial Branch for the year amounted to £4,184,935; of this sum £3,650,307 was in respect of death claims, £346,831 on account of matured endowments, and £187,797 surrenders. These amounts include £304,735 paid under free policies which have been granted under our old age concession or in cases where the payment of premium was discontinued. Included in the death claims is the sum of £321,178 paid in respect to policyholders who died as a direct result of war service.

A conference of Scottish Local Authorities was held in Glasgow last week to consider the restrictions by the Board of Health of the heights of ceilings of houses erected under the Housing Schemes, and to decide what action should be taken in the matter. Provost Mitchell, Greenock, presided, and spoke of the discontent caused by the action of the Board of Health in fixing the maximum height of ceilings at 8 ft. 6 in. He moved that discretionary powers should be given to local authorities to increase the height to 9 ft., and that representations should be made to the Board of Health on the subject. Ex-Bailie Morton explained the situation in Glasgow, where, he said, the Housing Committee had drawn the line at 8 ft. 6 in., after having had expert advice on the matter. There was evidence that high ceilings were simply a harbour for foul atmosphere. The conference, by a majority, adopted a resolution expressing the opinion that discretionary powers should be given to local authorities to increase the height of ceilings to 9 ft., and resolved that the additional cost involved should also rank against the Government grant.

The marked tendency during the past few years to resort to arbitration when disputes arise between business men, instead of indulging in litigation, has not been unaccompanied by misconceptions of the proper nature and compass of an arbitrator's functions, and "Commercial Arbitrations," by E. J. Parry (London: Sir Isaac Pitman and Sons, Ltd., 1, Amen Corner, E.C.4. 3s. 6d.) may be not unprofitably studied by some who have failed to grasp the fact that an arbitrator's first duty is to deal out justice, not to drive a coach and four through the law on "commonsense" lines, and have subsequently realised the unwelcome fact that such decisions may be set aside by the ordinary Courts, with the result that costs are sometimes doubled, especially where many counsel are engaged. We have known arbitrators talk about their "clients" and "principals," apparently quite oblivious

of the fact that they are not advocates, and should be absolutely unbiased, and, certainly, care in selection of arbitrators is advisable.

At the last meeting of the St. Helens Town Council on March 3, Mr. R. Ellison, a well-known builder, quoted figures showing it was almost impossible for town councils or private individuals to build houses, and moved an amendment to the resolution passed by the Health Committee by which they asked the Ministry of Health to take steps to provide the Council with bricks, cement, etc., as follows:—"Resolved, that the local Labour leaders do earnestly beseech the operatives engaged in the building industry and transport trade to agree to a longer working day, and do their very utmost to increase the amount of work done in a working day, so that the Council may erect houses at a cost that will justify the letting thereof at rents which the tenants can afford to pay." The Mayor said he did not quite see how this affected their business. Mr. Ellison said his sole object was to emphasise the fact that the great trouble in regard to costs was the labour and transportation of materials. He was content, having made his point, to withdraw his resolution.

The representation of King Edward's little favourite, Caesar, on the new monument of his late Majesty in St. George's Chapel, Windsor, recalls other instances of dogs in ecclesiastical decoration. They are not numerous in this country, but one of the best is to be found in Lord Brownlow's private chapel at Ashbridge, where a stained glass window depicts Tobias and Sara in bed with a dog sleeping on the quilt. Some few years ago the Chancellor of Carlisle refused to permit the representation of a dog in a stained glass window in a Westmorland Church, because he judged it incongruous.

Amsterdam is organising an Ideal Home Exhibition during the first week in May, in the well-known Paleis Voor Volksvlyt and the garden attached. The building is smaller than Olympia, and consequently the exhibition will be one of interiors only. A British section is being arranged. A well-known firm of architects in the city has the preparation and decoration of the building in hand. Besides silver and bronze medals to the successful exhibitors, there will be awarded an honorary distinction to the best exhibit in labour-saving devices. The arrangements here for the British section have been undertaken by Dr. W. R. Bisschop, who supervised the exhibit of the Dutch Ministry of Labour, of means for solving the building problem, at Olympia; and assisting him is Mr. F. W. Bridges, 36-38, Whitefriars Street, E.C.4, to whom all applications for space should be addressed.

The Prince of Wales has become the patron of the new British School of Archaeology in Jerusalem, formed for the study of the field of archaeological research now opened in Palestine and the neighbouring districts. The Director (Professor J. Garstang) is shortly proceeding to Palestine to complete the organisation of the School. As soon as the political destiny of Palestine has been fixed a Department of Antiquities will, it is hoped, be formed, under which the School looks forward to collaborating with the Palestine Explorations Fund in the excavation of an important site already provisionally selected. All interested in the School are invited to communicate with the Secretary at 2, Hinde Street, Manchester Square, W.1.

Converted by Mr. George Helps, of Nuneaton, the Oldham Corporation has secured his services for a crusade against the present system of gas manufacture. At the Central Hall, Westminster, in the presence of the Lord Mayor, on Tuesday, Mr. Helps demonstrated the possibility of increasing efficiency and reducing cost in gas production at the same time. Oldham, it was stated, has halved its coal consumption and its gas bill by "adulterating" the standard supply with nitrogen, technically known as "inert," or useless. But Mr. Helps advocates the complete gasification of coal. This process destroys the coke, but puts in its place a vastly increased volume of gas, which might be supplied at 1s. per 1,000 cubic feet.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House.

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OUR ILLUSTRATIONS.

The Tite Prize Design for an Italian Loggia, with a Library over. Royal Institute of British Architects, 1920. View from forecourt, plans, sections and elevations by Mr. P. H. Meldrum. Jeanne D'Arc. Design for Stained Glass. A cartoon from the Royal Academy, by Miss Rachel M. Tancock.

Currente Calamo.

Statements have been frequently made in public that architects are largely responsible for delay which has occurred in getting houses built in connection with State-aided housing schemes. The Society of Architects is therefore collecting evidence in order to demonstrate to the Ministry of Health that this is not the case; and, further, to show that in certain instances, architects are inadequately paid under the scale of charges laid down in Housing Memorandum No. 4. Architects engaged in carrying out State-aided housing schemes are invited to communicate with the Secretary of the Society of Architects, at 28, Bedford Square, W.C.1, giving such information as will enable that body to present an incontrovertible case to the Ministry of Health on both these points. We hope this invitation will be promptly responded to. We hardly open a provincial paper in which such allegations are not made by apologists for the shortcomings of the Health Ministry. In this connection, the following paragraph from last Friday's *Acton Gazette* is noteworthy:—

"Prepare for a storm at the next council meeting over the 'Selfridge' houses. The conditions under which it was proposed to construct them have been modified, owing, it is said, to the demands of the Council and to the increase in the cost of materials. In any case, they will not be anything like so cheap as was first foreshadowed, and now a proposal has come up from sub-committee to committee that will tend to alter the whole basis of the scheme. The Ministry of Health demands the carrying out of the new proposals, but members have made strong protests in committee. Some frankly express regret that the Council ever endorsed the scheme, and obtained ground for

as far as we know, there is no architect or the Selfridge Houses, so there will be no attempt to saddle him with the blame. Who is to be the scapegoat?

The scheme of professional education described by Sir William Wells in his address last Friday night to the Auctioneers' and Estate Agents' Institute, seems to us rational and practical one. The Surveyors' Institution has done much, and so has the Auctioneers' and Estate Agents' Institute, to ensure that the land agent, the surveyor, and the auctioneer shall receive a liberal education. But the work is by no means complete. During the war the University of London instituted a

B.Sc. Degree in Estate Management, but so far no student has yet taken the examination for that degree. Now there are better opportunities for tuition there will doubtless be many candidates for a distinction which will in no short time be as necessary as it is in other branches of technical education. Sir William Wells looks to the College of Estate Management, of which he is the founder and first president, to supply the required tuition, and much more. He wishes to see his calling endowed with those attributes "which distinguish a profession from a mere money-making business," and education and effective control from within are the two most certain methods of attaining it.

The restriction of mortgagees in the exercise of their power of sale and foreclosure was one of the things done by the Increasing of Rent and Mortgage Acts. But this war legislation preventing mortgagees from realising their securities was only applied to dwelling-houses up to certain rentals. Now mortgages often cover such houses of various values: some under and some above the statutory limit. In the recent case of "Re Dunn's Application re an Indenture of Mortgage," there were two freehold houses at Aldershot included in the deed, and the trustee wished to call in the money for distribution amongst those entitled. The Rent Acts limit their operation in country places to houses rented below £52 a year. Here one house was below this line, and so was within the statute, but the other, let at £60, was outside it. The mortgagee had called in the money due on the mortgage which the mortgagor did not want to pay off. So the matter came before the Court on a summons which was heard by Mr. Justice Eve. The mortgagee's argument was that as one of the houses in the security was outside the Act, both of them must be, as they were both in the same mortgage, and therefore he should be able to sell. But the judge looked at the point in another and opposite way. The Act of 1915 dealt with a mortgage which "comprises one of more dwelling-houses," and here the deed included a dwelling-house within the Act. So the mortgage itself could not yet be enforced, and the summons was dismissed with costs. The same result would seem to follow if one house out of say twenty in a mortgage was rented below the limit. Such mortgagees

are therefore hung up until after Lady Day, 1921, and for any further period to which these Acts may come to be extended.

A conference, representing about 100,000 building trade operatives, met in Manchester last Saturday, and decided in favour of a wide extension of the Guild idea in the building of working-class houses. A Building Guild for the North-Western area of England was formed, and it was left to the discretion of the officials to transform it into a national body when the time appeared to be opportune. Local committees in the North-Western area were called upon to mobilise sufficient labour to build not less than 75,000 houses within the next two or three years. This decision will be made known to the Minister of Health, and presumably an opportunity will ultimately be given him of either accepting or refusing a definite offer to build. Strong protests were made against the attempt by the Ministry of Health to impose the acceptance of a cheaper house upon local authorities. Councillor Coppock, Manchester, said they should refuse to build such kennels, and in this view he was supported by other speakers. One delegate said that when he and his wife went from Wiltshire to London she complained that the houses were built without cupboards. Now, he said, the Government was going to build cupboards without houses.

At the meeting last week at Merchant Taylors' Hall to further the restoration of the roof of St. Helen's Church, Bishopsgate, Mr. F. L. Pearson, F.R.I.B.A., architect to the church, gave a description of the trouble. He said that the roof was of the 15th century, and it appeared that the wood was sent from Ireland, the Dublin Castle record containing, he was told, a reference to the export of the timber. He was at the moment inquiring from Dublin the date of the entry in order to fix the exact date. In a great part, the condition of the roof was serious, but the examination was not yet complete. It seemed strange that several buildings were at the moment undergoing treatment for the same trouble. At Westminster the roof of the Hall had given cause for anxiety, and was now being dealt with, while nearer home they had the case of St. Mary Abchurch. The experience at Westminster was valuable, and he had received much assistance from Sir Frank Baines. It was

not possible to say what the ultimate cost of the work would be, but up to the present between £1,500 and £1,600 had been spent on making the ascertained damage good. He said that as a Professor of Archaeology in the University of Cambridge, he had a peculiar interest in the church of St. Helen; for they were there on one of the very earliest sites of British Christianity—a site which existed long before the coming of the Anglo-Saxons. St. Helen was the Emperor Constantine's mother, who found the true Cross, and to whom this church and others were dedicated. At St. Helen's, as at St. Peter-on-Cornhill, they were on a site of a church of the British Christians before St. Augustine was heard of. When the Danes ravaged the East coast, the body of St. Edmund was brought to London for safety, and laid in the church at Bishopsgate. That was in 1010. There it stayed for three years. In 1180 the church was in the possession of the Canons of St. Paul's, who made it over to William Fitzwilliam, who founded the Priory of Benedictine Nuns, and dedicated it to St. Helen and the Holy Cross. The Nuns put up an annexe so that they might attend without being seen. In 1212 came the great rebuilding, and still the double nave was retained. Later there was Lord Mayor Adam Frauncey's gift, and in 1475 came the great gift of Crosby. Then, in the time of Henry VIII., the church was handed over to the parishioners.

Some of our forebears were lake-dwellers, and it seems likely that not a few in despair of ever finding a house may follow the example of Mr. Cyril Ionides, who in his book "A Floating Home" tells us how and why he sold his cottage and went to live in a genuine Thames sailing-barge in one of the Essex shallow estuaries. The smaller sized Thames barge is 75 feet long and 17 feet broad, and every inch of the space is usable. The "Ark Royal," formerly the "Will Arding," has a drawing-room 16 feet by 14 feet in size, which is larger than the best room in many a small house. The sleeping cabins are small, but not one bit smaller than the bedrooms in some of the "Garden Cities." "Ideal Houses" to-day cost from £700 to £1,200 to build. The "Ark Royal" was bought and fitted up complete for £375. It is true Mr. Ionides did most of his own carpentering; but so might anyone else. A much-reduced bill for light and heating has to be paid, for a barge home is easily warmed and has no insidious draughts. There are no rates, because you float. Flotation—even for less than five minutes in the day—is the great emancipation from the rate-collector's clutches. You even escape that penny rate which is to go towards the building of houses for persons who are, as likely as not in these days, better off than yourself. An hour's ride by train will give you the "pleasures" of the town, and the butcher and the baker will serve you as cheaply and much more civilly than the storekeeping profiteers. Even the Caravan—that one other dream of the homeless—cannot offer all the advantages which the barge home boasts.

Mr. Arnold Spencer Nicholson, of Wakefield, architect, has left net personalty £231; gross, £14,077.

HELLENIC ARCHITECTURE — ITS GENESIS AND GROWTH.

No such apology as he offers was needed from Mr. Edward Bell, M.A., F.S.A., for the issue of his new book under the above title. (London, 'G. Bell and Sons, Ltd. 7s. 6d.) It is true, of course, as he states, that apart from the professional textbooks for students, there are good handbooks for the student or for the general reader, but in such the sources of Greek architecture are partially recognised and the process of its formation is treated more or less tentatively or summarily, but little attempt is made to show its æsthetic evolution in history and logical sequence. This, doubtless, has been due to the fact that it is only within recent years that archaeological research has disclosed the remains of earlier phases of civilisation, in which the roots of classic culture were embedded. To fill the gap in the early history of classic art is the object of his present volume, and the industry with which he has collated many reports of private societies and special volumes not yet published in this country, together with the large number of illustrations he has gathered together from various sources, will ensure a welcome from all, not excluding some who may accept his conclusions with qualifications. His purpose and intended scope he thus briefly describes:—

"In a former volume on the architecture of Ancient Egypt, I attempted to show that a style of building, based on the use of stone, had in that country already attained considerable grandeur, and might have been still further developed if it had not been interrupted by the intrusion of comparatively barbaric ideals due to the domination of more distinctly African races. That the earlier and purer Egyptian art had some influence on that of Crete is not disputed; and it would have been more in accordance with my general plan to have examined the architectural remains of the Ægean area before dealing with the more developed art of Greece. But the time is hardly ripe for this, and whilst the results of research in the islands and on the coasts of the Ægean still await co-ordination and connected treatment, I have found it necessary to condense into two chapters the special features which characterise Minoan and Mycenaean building and give them a place in the main line of architectural history."

There was, of course, a time, not yet perhaps wholly past, when the glories of Greek architecture were regarded as a spontaneous emanation of racial genius, influenced only by Asiatic art, and practically independent of that of Egypt; and until Asia Minor and Mesopotamia have been more thoroughly explored, it may be impossible to say confidently what the mutual relations of Chaldean, Hittite, Babylonian, Assyrian, and Persian art may be. Mr. Bell says:—

"The dark age in Greece seemed but dubiously illuminated by the Homeric poems; and the architecture there depicted, dealing as it does with palaces, and ignoring temples, gave little help to archaeologists who knew of no palaces, but were intent on explaining the Parthenon. The picture of the palace of Alcibiades with its brazen doorways, silver columns and corulean friezes seemed to be a creation of pure fantasy, a dream of a poetic Utopia rather than a legend based on anything that had ever existed. But Schliemann's discoveries suddenly threw a beam like a searchlight on the subject, and his work, supplemented by that of Dr. Dörpfeld and others, has shown that the Homeric descriptions are but slightly coloured reproductions of a bygone civilisation, some vestiges of which must have lingered even to the date at which the poems received their literary and connected form."

Thanks to Sir Arthur Evans' discoveries in Crete, it has been generally admitted that the Homeric descriptions unveil vestiges of an earlier civilisation, of which some vestiges lingered even till the time when the poems received their connected form. Mr. Bell admits that much doubt as to the ultimate sources of the Minoan

civilisation still remains, and he says the very different theories that have been put forward by well-known archaeologists have not tended to dissipate it. His own view is:—

"That Minoan and Mycenaean art was widely diffused on the continent of Europe has been proved by archaeological investigation, but so far as the art of architecture is concerned it received certain modifications from the customs and requirements of the more military races who already possessed the land. The civilisation that resulted is that which was called Mycenaean; but though its focus appears to have been in Argolis it was far from being limited to Peloponnesus, and in the tenth century had extended itself to northern Greece and to many outlying settlements on both the east and west. It was this civilisation that the irruption of Dorian tribes temporarily submerged, and in the long run, by the introduction of new influences, materially transformed. It is not necessary to assume that these northern invaders were a barbarous horde who destroyed for destruction's sake. On the contrary, they appear to have brought with them some culture of their own, and a new form of worship which was ultimately adopted by the whole of Greece; and it may be assumed that as soon as they had established their supremacy in Peloponnesus they assimilated to some extent the arts of their subjects, and adapted the existing architecture to the requirements of their own religious cult. The archaeological grounds for this theory have been given in the foregoing pages, and the process suggested; and though much must be regarded as conjectural, there appears at present to be no more probable explanation of the origin of Doric architecture and its culmination in the work of the great Athenian artists of the fifth century."

"The sources of the Ionic order are in some respects more obvious, in others more difficult to discriminate. That it was originally based upon a construction mainly, if not entirely, of timber is generally taken for granted, and so far as its columnar form is concerned it may be supposed to have a common origin with the Doric. But the peculiar voluted form of the capital is apparently due to some tradition which prevailed in Western Asia long before the Ionic immigration, though the typical form which became classical must have been perfected by Athenian architects. A similar process is illustrated in the evolution of Greek sculpture, which, based originally on the conventional art of Egypt, became imbued with characteristics which are more distinctly Asiatic, until it finally attained the naturalistic perfection of the school of Pheidias and his successors."

"Yet Ionian builders and artists remained eminent in architectural achievement, and notwithstanding the perfection attained by the art of the motherland in its self-imposed limits, it was chiefly through Ionia that the architectural tradition retained its vitality. The tendency to luxuriance generally characteristic of Oriental races brought its influence to bear in Asiatic Greece, and its artists refused to be restrained by the austerity of pure Hellenism. Under the Macedonians the use of the Corinthian capital, with greater freedom in the decoration and composition of the entablature, resulted in the formation of a new order rich in ornament and untrammelled by any formal canon. This Hellenistic art captivated the Roman conquerors and appealed to the love of ostentation which grew up under the Empire; and ultimately, reinforced in its decay by new influences from the east, and by new vigour from the north and west, led to the romantic glories of Gothic Art."

Whether all his readers will follow him to the full extent of the last paragraph is perhaps uncertain; but that his views will receive respectful attention, and that his book will take its place along with that published some five years since on Egypt as a valuable contribution to the literature of the subject no reader interested can afford to miss, is unquestionable.

The death has occurred at Leamington of Mr. Walter Pearson Evans, aged 74, a nephew of George Eliot. Well known as a land agent and mining expert, he at one time managed the estates of Lord Aylesford, Sir Francis Newdigate, Colonel Bromley Davenport, and others. In recent years he carried out important developments in the Warwickshire coalfield. He was a brother of Canon F. R. Evans, the old Oxford cricket Blue.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

An ordinary general meeting of the Royal Institute of British Architects was held on Monday at 9, Conduit Street, W., Mr. Jno. W. Simpson (President) being in the chair.

AMERICAN DEPARTMENTAL STORES.

The formal business of the meeting having been transacted, Mr. Herbert Austen Hall, F.R.I.B.A., read a paper on the planning of American departmental stores. The lecture was illustrated by lantern slides. One store which Mr. Hall selected for somewhat detailed treatment was the well-known Wanamaker store in Philadelphia, of which Messrs. D. H. Burnham and Co. were the architects. This store, said the lecturer, was the largest in America in one building, and measured 480 ft. by 250. It was twelve stories high, including basements going 34 ft. below the street level; the total height of the building was 281 ft. It occupied an entire city block, thus having streets on all four sides, which gave the opportunity for an ideal store plan. The present building, completed in 1911, replaced an older one on the same site. In order that the work of demolition and rebuilding should interfere as little as possible with the business of the store, the work having been divided into three portions, the excavations under the first portion were carried out before the demolition of the building. The underpinning of the upper part, excavating of basements and bringing of foundation and retaining walls up to the state in which they were ready to receive stanchions and superstructure, was completed in nine months, and the old buildings standing over the new basements were then pulled down. The same procedure was followed with the other two portions. In order that the three sections might be accurately joined, records were taken by bench marks of the settlement during building operations from start to finish of the first section. The building went down half an inch, and this was allowed for, so that no sign existed of the junction of the three sections.

Describing the building as now standing, Mr. Hall said the feature of the interior was the grand court, 112 ft. long, 66 ft. wide, and 150 ft. high. Only the very largest stores adopted this principle of a central court for light; for, when it was a question of more daylight or more floor space, the choice invariably fell on the larger floor space. Consequently, most stores practically depended upon artificial light on all floors. At Wanamaker's the large court, besides giving light, was of great assistance in ventilation. Another matter was that in this store an appeal to the artistic sense met you on every hand; it was beautified by many pictures, bronzes, and objects of art.

The Filene store at Boston (by the same architects as Wanamaker's) was described as presenting a problem more nearly that which had to be dealt with in London. The maximum of glass was required on all floors, and the design was practically that of a frame for the glass fronts. The solid portions of the design were carried out as a light terra-cotta surround, with the filling of green terra-cotta coverings to the stanchions. The piers on the shop front line were reduced to a minimum, but the effect of the building standing on glass was overcome by the use of projecting canopies at the angles, which made a strong line of separation between the superstructure and the showcases on the street level. In this store lack of space prevented the department for men's goods being placed on the first floor, but practically direct access to the street was obtained by means of an escalator placed immediately within one of the store entrances. In this building the stories were not nearly so high as those of Wanamaker's, the ground floor being 20 ft. and the others 15. Restrictions on the height of buildings in Boston accounted for this.

Another store described was that of Messrs. Marshall, Field and Co., of Chicago, who carried on, said Mr. Hall, the largest dry goods business in America. It was spread out in several blocks, erected at various dates, and connected by subways under the street. Messrs. D. H. Burnham and Co. were again

the architects. In this case, to facilitate the handling of goods, a separate building in a central position in the city was used as a distributing station. At the main building packages were loaded into trucks without being sorted, and were taken to this station. Upon arrival they were emptied on to a belt conveyor, which carried them to an inclined chute, at the foot of which stood the clerks, who marked each package with the route it was to be sent.

The Tiffany building, designed by McKim, Mead and White in 1906, and built entirely of white marble, was described by Mr. Hall as one of the landmarks of Fifth Avenue; while, internally, the furnishings reached the high water mark of richness in design. The Gorham building, almost opposite Tiffany's, and designed by the same architects, was, nevertheless, entirely different in concept. It was simpler in its lines, was the most gracefully proportioned building in Fifth Avenue, and the model of many that had followed it. The ground floor was so designed as to give a large amount of glass surface without impairing the solidity of the building; a great overhanging cornice made a worthy finish to one of the finest designs America had produced. Another notable addition to the architecture of Fifth Avenue was Lord and Taylor's store, designed by Messrs. Starrett and Van Vleck, and completed in 1914. The elevations were remarkable for the freshness and simplicity with which they were treated. The show windows on the ground floor illustrated the latest phase of the shop window, and the whole of the fenestration was carefully considered in relation to the imposing doorway carried up through two stories in height. The internal treatment was elaborate, and Roman travertine stone was much used for walls and floors.

Mr. Hall threw on the screen illustrations showing a number of other American stores. He said the ablest American architects had given of their best to this matter. The immense activity in this form of building in London was the measure of the British architect's opportunity. Fresh problems, constructional and aesthetic, required fresh thought, and if British architects could not find this for every emergency, they would fail of the service they desired to give. American architects had two great advantages: one of these was that there was in their country an immense appreciation of fine architecture in all classes of the population; the other was that the business man there considered his building as an investment, something more than an advertisement, and he wished it fine in every respect. In this country, too, our utterly out of date building laws, although ably administered, did a great deal to destroy imaginative work. (Applause.)

A discussion followed, in which the two points most insisted upon were the interest in architecture exhibited in America and the injurious restrictions upon the architect imposed by building Acts here.

Mr. Gordon Selfridge moved a vote of thanks to the lecturer. He said that to the man of business in America architecture was as necessary as daylight. He could not agree that the whole American public appreciated architecture, but they were growing to do so. During the last twenty years they had come to look upon a fine building as being the almost necessary accompaniment of a fine business.

Mr. John Murray seconded the vote of thanks. Speaking of the unnecessary restrictions imposed by the Building Act in London, he said that twelve years ago he had fought single-handed a fight which had resulted in the London County Council agreeing that the Act of 1894 did not contemplate a drapery establishment as being of an inflammable nature. He believed the limitations on height and cubic capacity were required by the fire brigade, but some time ago the fire brigade announced its ability to throw a jet of water at least 150 ft. high. He thought it would be better for architects to design an adequate space for the name on a shop rather than leave the tradesman to put the name on an unsuitable place, and that London architects should rather model

themselves on Paris than New York when designing large retail establishments.

Mr. Milburn (Messrs. John Barker and Co.) said it was altogether wrong that the final authority to settle the plans of a building should be the fire brigade. The fire apparatus in this country should be as modern as that of America. It was absolutely essential that the building should be so designed as to give a large open space for the display of goods.

Mr. Vincent Harris said that America had contributed two essentially modern buildings to the world—the modern store and the modern office—and had worked these out to a logical conclusion with characteristic thoroughness. One advantage which the American architect had was that there were no "ancient lights" in America.

Mr. Clark (Selfridge's) said that the feature that impressed him most in the interior of American stores was the general facility that the open spaces gave for departmental planning.

Mr. Edwin T. Hall said he was associated with a building with two acres of ground space. He had started designing immense areas, but the County Council would not consent to his plans; he would, however, get some considerable areas. He hoped when Regent Street was finished it would be a worthy street of shops able to compete with some of the finest streets in America.

Sir Henry Tanner said it was monstrous that if they exceeded 250 ft. floor space they were not allowed to go more than 60 ft. in height for the top storey. Unless the Crown and tenants got some alteration in this it would be a worse handicap than the rise in prices.

Mr. J. J. Joass, speaking of American interest in architecture, said that Wanamaker's new building was formally opened by the President of the Republic, attended by a bodyguard of a full battalion of U.S.A. troops—over 1,000 men. The future development of architecture in this country would be very largely connected with the departmental store. More money would be spent in that direction than in any other.

Mr. Robert Atkinson said the extraordinary efficiency of American architects was due to education. A great part of the success of these large buildings was due to the engineer. The managers of the stores also did a great deal of the planning.

The President said it was absurd that the height of buildings should be fixed ultimately by the fire brigade. It was the duty of the fire brigade to follow the buildings. The London Building Act was quite out of date, and should have been long ago superseded.

The vote of thanks was heartily accorded.

In acknowledging the compliment Mr. Hall said the obvious outcome of the meeting should be the formation of a committee to agitate for a reform of the London Building Act. Millions of money were now being wasted because buildings were not designed economically and sensibly.

OBITUARY.

Mr. F. J. Williamson, Queen Victoria's private sculptor, died last Friday night at his residence, Esher, where he had lived for some sixty-three years. His work included nearly 300 portraits and nineteen statues of Queen Victoria, which are distributed in various parts of the Empire. Mr. Williamson was born on July 17, 1833, at Camden Town, and educated at a private school at Hampstead. On leaving school he was brought to the notice of the late John Bell, the sculptor of the Guards' Memorial in Waterloo Place, who conducted a class in modelling at Somerset House, at that time the home of the Royal Academy, where young Williamson went to receive instruction. While attending this school of modelling he was introduced to J. H. Foley, to whom he was afterwards attached.

A new vestry has been dedicated in the church of St. John's, Oakfield, near Ryde, Isle of Wight, as a memorial to eighty-eight parishioners who fell in the war. The vestry cost £800, and is free of debt.

KITCHENS AND BATHROOMS.

(Concluded from page 192.)

From a *practical* point of view, I have come to the conclusion that a well distempered ceiling and a deep frieze also in distemper are the best on account of the condensation which always take place, and becomes absorbed by the distemper and plaster behind it and does not therefore trickle down the walls. The water resisting treatment being continued from the floor line up to the frieze only, is then within easy reach of the maid, who can wipe down the walls from time to time, when they become marked by condensation or splashes of soap from the bath or lavatory basin.

For appearance it is easier if one is free to carry out the decoration right up to the ceiling. Very handsome effects have been obtained by the use of marbles, decorative tiles and vitreous mosaics. These are all expensive: marble costs roughly £5 per yard super, fixed, decorative tiles with suitable borders from about 55s., and vitreous mosaics about the same. Many bathrooms have been finished with plain white tiles. These give a very cold and chilly appearance, and no one could accuse them of being in any way decorative. Plain white tiles are all very well in a dairy or larder.

Bathrooms should be decorated and made places of beauty. The walls can be *painted*, and decorated with *really good* stencilling, finished off by hand so that it has the appearance of hand-painting.

I admit that stencilling may be regarded with a doubtful eye, not because it is inappropriate in itself, but because, as ordinarily carried out by "decorators," it leads to some strange and fearsome effects.

I obtained a very pretty and at the same time comfortable result in a house in Beaconsfield by putting up a dado in vitreous mosaic in lovely shades of mauves and greys, panelled out and bordered, above which the filling was of salubra in a very pretty warm grey (almost a "mauvy" grey) finished off with a design consisting of violets, leaves, and upright oval wreaths. These were put on with stencils, but all painted over afterwards by hand. The filling could, of course, have been painted and flatted instead of using salubra, which is at present difficult to obtain.

I am experimenting on a scheme I have thought of, of beautiful decoration on the walls covered with glass, and if I find it successful and feasible, will get over many difficulties, and make the bathroom not only a place of beauty, as it ought to be, but would be durable and very easily kept clean. I should think the cost would work out at about 20s. to 30s. per yard super, but this would, of course, depend upon how much or how little decoration was painted on it.

A very effective room I did consist of Chinese ornament, dragons, key border, etc., worked out in strong colourings. The main portion of the walls was painted that lovely shade of Chinese blue, and strong touches of scarlet, black, and yellow, the doors, dressing table, lavatory basin support, and mirror frames being decorated in red Chinese lacquer, with the funny little figure birds, bridges, and so on, one finds in Chinese ornaments, painted in relief—and the lampshades in rich colourings and of a quaint Chinese pagoda design.

With regard to the floor, no doubt that the smartest appearance is obtained by marble, vitreous mosaic, or pretty tiles, laid to a simple design, and finished with suitable borders, but by far the most comfortable and nicest to use is cork parquet, laid exactly like oak parquet flooring, the pieces of cork being about $\frac{1}{2}$ in. or $\frac{3}{4}$ of an in. thick, about 3 in. wide, and anything from 9 in. to 17 in. long.

The next best thing for comfort is a good thick cork carpet.

Both of these require proper cleaning and drying daily, but are soft and warm to the feet and do away with the unsightly cork mat, which is always in the way, and these floors can be stepped on from the bath, with or without the ordinary bath-mat, before getting into bedroom slippers.

KITCHENS.

It is rather surprising to see how little attention the architect of even the Early-Victorian era paid to the convenience and position chosen for the kitchens. He was probably influenced in some degree by his earlier progenitors, as we find that it was quite a common practice to conceal the kitchens, even to the sacrifice of convenience, and in some cases they were underground or detached from the house altogether.

In the fourteenth and fifteenth centuries the kitchens were often spacious, but contained little more than a large open fire for roasting, a large built oven, and possibly a subsidiary fire for boiling.

At Christ's Church College, Oxford, can be seen to-day a gigantic grid that was used over an open fire in the centre of the kitchen in Cardinal Wolsey's time.

Although the kitchens in these early days were barren of apparatus for cooking, they excelled in many other directions, such as accommodation for larders and stores of all kinds. Few large establishments were without an ample supply of ice or snow for use during the summer. In the winter it was collected and stored in caves or specially built underground chambers.

The planning of modern kitchens and the attention they receive from architects of to-day are in violent contrast to that of bygone days.

In treating this subject of modern kitchens it is desirable (owing to the great difference of equipment, etc.) to subdivide them according to their uses; so I propose to deal with them under the headings of:—

- (1) Those for private residences.
- (2) Hotel and restaurant kitchens.

"Private residences," of course, is a wide term, but the leading features are much the same whether for a large or small house.

In planning a modern kitchen, some of the most important features to consider are economy of upkeep, cleanliness, and convenience. For this reason if coal is used, the coal and coke cellar should be as near as possible to the kitchen.

There are three types of ranges suitable for private residences—viz., electrical, gas, and coal. The first, unfortunately, may be ruled out for the present in this country, not only is it most expensive to run and instal, but the manufacture of electrical ranges is in its infancy. In America they are greatly ahead of us in the matter of electric cooking apparatus. Provided one can obtain the current at a reasonable rate, I believe the advantages are all on the side of the electrical cooker.

Gas ranges are cleanly and easily controlled, but for private residences are not much in favour. The running expense is much higher than coal ranges, and generally the cooked food is more appreciated when done in the latter.

For most houses I recommend a separate independent boiler, connected to a hot-water cylinder of ample size, capable of giving plenty of hot water for the baths, lavatory basins and sinks, day and night.

If the range has a boiler, the independent boiler can be arranged to work in conjunction with it, or separately as desired. There are a number of efficient boilers on the market, made to suit all the various requirements, and incidentally they are most useful as an incinerator, to burn up all household refuse.

It cannot be too often emphasised that cleanliness and everything arranged to facilitate cleaning is one of the most important points to consider in planning or fitting up all kitchens, whether in private houses or hotels and restaurants, etc. In view of this, all surfaces of walls and floors should be non-absorbent. Everything should be light in colour, not only because it is more cheerful and improves the light, but also because dirt is more readily seen, and therefore more likely to be removed. I can feel ten thousand dirty cooks rising to curse me over these remarks, but I never did much fancy a dirty cook. Tiled walls are very satisfactory, and quarry tiles or "granolithic" form good floors.

The next thing is the furniture and the arrangement of it, for convenience and saving of energy. At present we do not usually ex-

pect to find anything more novel than the ordinary kitchen dresser, one or two tables, and the required number of chairs, and probably a cupboard of some kind.

I recommend that instead of the ordinary dresser (or in addition to it) a "fitted cupboard," in which *nearly* all the utensils, materials or ingredients needed, are gathered together, thus saving running all over the kitchen and scullery to get things, and so almost everything is at hand, a stool is recommended for using with it, this being rather higher than the usual chair height. The cupboards should have large castors to move easily for cleaning behind.

The kitchen table should have an aluminium, or white porcelain or opal glass top, being much more easily cleaned than the old fashioned plain wooden top. There should be a "butler's table" on large easy-running castor wheels, rubber tyred, fitted with drawers, shelves, removable glass tray on the top, and a wide handle at each end.

With this an entire table can be laid or cleared with one trip from the kitchen or pantry, and it would take the place of the old fashioned "butler's tray and stand."

The sink should be in the kitchen, if possible, and should be a double one; one portion for washing in very hot water, containing soap, soda, etc., the other very hot clean water for rinsing, after which the plates and dishes can be put straight into the plate rack above, and, being very hot, they dry quite bright without wiping, and the cooking utensils, after being cleaned in similar manner, go into their places in the fitted cupboard, the tea and breakfast things being dealt with in the same way.

The sink should be fixed at such a height that the bottom of it should be about the height of a table.

The furniture and fittings should be grouped on three or four sides of a square with just enough space in the centre to allow one or two people to work comfortably, and it has been found a convenient way to arrange in the following order:—

Ice box or refrigerator near door to larder or in it; the "fitted cupboard"; then the cooking stove and sink; the independent boiler, where the kitchen refuse is disposed of, and also an electric power motor (called an Aladdin Slave), all as conveniently near the fitted cupboard as possible, the large porcelain top table and "butler's table" being conveniently at hand.

With a fitted cupboard the "kitchen table" may be dispensed with, as it is provided for in the cupboard in the form of a large slide, almost the full width of cupboard, giving a working space of anything from 16 in. to 27 in. deep by 4 ft. to 5 ft. long, according to the size of the fitted cupboard, the latter containing also a chopping board and a pastry board which slide in and out under the "table top" slide.

On the right or left of the fitted cupboard there should be an opening through the wall fitted with a small door opening downwards, thus forming a shoot through which ashes and refuse can be shot straight into a dust-bin standing outside the wall. It seems to me to be a waste of labour to collect the refuse in the kitchen and then have to go outside to empty the pail into the dust-bin, if it could be thrown straight into that receptacle through a little trap door.

The washing-up scullery should have $1\frac{1}{2}$ in. or 2 in. thick teak sinks and draining boards. Each sink is fitted with a steam silent water-heater. This is an ingenious contrivance. It is like a ball about the size of an apple connected to a steam tube. The ball has small holes all over it, through which steam passes gently to heat the water to any temperature. Above the sinks and draining boards should be fitted plate racks.

It is a great saving of labour if a galvanised iron pot boiling sink is installed. This is heated with a steam silent water-heater and is, of course, used for the purpose of cleaning the saucepans.

The foregoing equipment is typical of most hotel and restaurant apparatus, and if well schemed should make cooking and serving less burdensome, more efficient, and less costly than in the past.

THOUGHTS ON ECONOMICS IN RELATION TO THE PRESENT CRISIS.*

By Sir AMBROSE Poynter, Bart., F.R.I.B.A., M.S.A.

It seems to me that in a discussion such as this, the object of which is to ventilate and illuminate a subject often considered musty and obscure, the speaker should begin by making clear just what he means by the technical terms he employs, for, where abstract questions are concerned, these terms often seem capable of the most varied interpretation. I do not, of course, expect the views I am about to express, and which I partly worked out in a book called "The Coming War," which I published rather over three years ago, to be accepted by you in their entirety. I can at least try to ensure that you know what I mean by the phrases I employ. "Economic" suggests economy, and economy is a word that should have a particular interest for architects, not because we are so often called upon to cut down our costs, but because the two Greek words from which it is derived mean nothing more or less than "house-law," though in the restricted sense of "household management" or "frugal and judicious expenditure." Proceeding from economy to economics, my dictionary tells me that economics is "the science of household management: political economy." Obviously I am not here to-night to speak of domestic economy, this is not the Ideal Home Exhibition, so let us turn to the second definition of economics as "political economy." Evidently "political" is not used here in connection with party politics. I am, to begin with, no politician—a being who, my dictionary tells me, is "one versed in or devoted to politics: a man of artifice and cunning"—nor do politics, as we understand them, engender a frugal and judicious expenditure. Political is used here in its sense of "pertaining to policy or government" and *political economy* is defined as "the science which treats of the production, distribution and consumption of wealth."

Now, if I were to take this as the basis of my paper, I might despair of even entering the confines of my subject in the time at my disposal, as it would involve me in a review of the whole structure of society, a limitless subject, and the most debatable that ever was debated.

I will therefore limit myself to that part of economics which treats of the production of wealth, and in this connection I will lay down an axiom, namely, that for the production of anything, wealth included, three things are necessary—brains, capital and labour. From this it seems to me there is no getting away. We may, indeed, quarrel with the distribution of what there is to divide, complain of the reward given to brain work, the share claimed by capital or the wages given to labour—we might advocate the view that capital should belong to the individual, limited companies, co-operative societies, guilds, municipalities or the State; nevertheless, these three factors remain.

I have stated my intention of limiting my discourse to that part of economics which deals with the production of wealth. What, then, do I mean by "wealth"? It is generally understood as meaning large possessions or accumulated riches. I do not, however, intend it in that sense. What I intend by it is simply the added value given to raw material or natural products by the united efforts of brains, capital and labour—in other words, the margin left by the selling price of goods or produce over the whole cost of production. It is out of this margin that the riches of individuals, communities or States is accumulated and increased, and further wealth provided. This surplus value may take the form of actual coin—gold for choice—or notes; of the transfer of credit in the shape of cheques or bills of exchange or promissory notes; of the transfer of shares, or even actual barter instead of indirect exchange of goods by one of the first-named expedients. The acquisition of goods for

our daily needs is the object and cause of the activities of most of us, and is generally performed not by direct exchange, but by the use of credit in the shape of cheques in this country. I define wealth, then, for my purposes, as the net increase given to raw material as a result of work performed by the combined efforts of brains, capital and labour.

But that is not all. I have been speaking of brains, capital and labour as if they were abstract entities. They are not. Brain workers, capitalists and workmen are also human beings, and I do not want, where they are concerned, to repeat the mistakes of the early nineteenth century political economist. His system of "buy in the cheapest and sell in the dearest market" demanded that a large supply of cheap labour should always be on tap, so to speak, to supply the cheap goods, and in his anxiety for cheap labour he omitted the human factor from his calculations—a mistake for which we are now paying dearly, both in unrest and in national health. The recently issued report of the Ministry of Health founded on the reports of the physical examination of men of military age by the National Service Medical Boards is a pitiful commentary on the riches garnered in our industrial towns, even when we have made allowance for the fact that before conscription, and the resulting medical examination came into force, a large number of the most healthy and active men had already enlisted. As human beings cannot be ignored in questions of economics, I propose before examining the brains, capital and labour combination for the production, to give a few words to our primary raw material in the shape of humanity. When I come to consider my fellow humans in the main, four things strike me greatly. One, how much more alike are we in essentials than most of us are willing to admit; two, how enormously we differ superficially; three, how greatly these superficial differences outweigh the underlying resemblances; four, what tragic misunderstandings these external differences give rise to. We cannot but admit that, to whatever class or group of the nation we belong, we are all human beings, and as such are entitled to consideration on the ground of our common humanity. All the same, while admitting the claims of our fellows to consideration, we must not forget that the understanding and sympathy born of this consideration should not be used to mask or cloak vital errors of policy and conduct, but to arrive at an understanding of their cause and remove it. Sympathy alone will not do away with the ill-effects of persistently ignoring fundamental laws. It does not, however, suit party politicians or social reformers to recognise this fact. The ends the politicians have in view are better served by representing whole groups of the nation either incredibly infamous or impossibly virtuous, and the politician's view of the infamy or virtue of any particular class or group is apt to depend on its voting power. The centres of virtue are thus continually shifting in accordance with the exigencies of the ballot-box.

The social reformer, on the other hand, persists in regarding humanity in general—with the exception of the individuals or classes who stand in the way of his pet reform—as just short of perfection which will be attained the moment his theories are put into practice. The politician, then, is prepared to build up his world on ground which he shifts to suit his needs; the social reformer builds his perfect state on an imperfect foundation. Fortunately no class has a monopoly of virtue. But even with the great underlying resemblance we possess in common, how few and far apart are the moments after our essential oneness is brought out by the vivifying emotion! The war was one of these moments, when we were startled to find out how much we all had in common, but I fear that the unifying effect it produced is, like all effects worked by emotion, quickly dying down. In the long run, small and superficial differences are apt to tell unduly just as a small annoyance upsets the temper more than a great disaster. But I must not continue in this strain and labour this point, or you will accuse me of letting minor considerations

overshadow more important ones. I trust, however, that the application of these remarks will become apparent later on.

I have now, in my own fashion, laid down the principles I should like you to accept, and on which I propose to build my super-structure. I have told you with which part of the economic problem I propose to deal—that of production, namely—I have told you in what sense I wish the word wealth to be understood, as representing, namely, the profits of industry, and I have named the three essential elements of production, namely, brain work, hard work, and capital. Further, I have told you that I consider the human element a factor that cannot be neglected and in this connection I have stated that the human beings who are, in one way or another, employed in hand work, brain work, and the possession or management of capital are essentially alike—more so than they are at all willing to admit, and consequently are well entitled to consideration, not on the ground of belonging to a particular group in the social structure, but on the ground of their common humanity. If then there is, as far as the human element is concerned, so much that is good, if in addition there is so much accumulated information on, and experience in existence as to, the materials and processes of the business of production, why do we not get better results? There must be somewhere a great misuse and waste of effort, material and opportunity. That we do not get satisfactory results is evident to all; we can hear the wheels of the machine groaning, grinding and shrieking even as they turn; they not only go slow, but threaten to come to a standstill altogether. Let us try ourselves by the touchstone of work. What is the attitude of the individual to his daily work? Let me for the present pass by the capitalist, the professional man, the manager, the foreman, the clerk, the salesman, the advertiser and the traveller, and begin with him who is known as the "working man" pure and simple—to whom the phrase of "earning his bread by the sweat of his brow," the curse of Adam (perhaps not such a curse after all; did not Roosevelt say "Sweat and be saved"?), is supposed peculiarly to apply. He it is, particularly if he belongs to the painful Trade Union, whose vote is most sedulously wooed; he it is who is told that he, by his personal physical exertions, alone has created and is creating the wealth of the country, wealth which he therefore logically, if the premise is correct, receives in its entirety. But is the premise a correct one?

Let us examine the claim which is put forward in all seriousness, and which undoubtedly exercises great influence on the minds of men who, working by the hour and paid by the week, do not as a rule think much more than a week ahead of them. Let us, as a fitting compliment to the position claimed for him, examine this man's claim first of all, and ask how he appears when regarded as the sole creator of, the sole contributor to, the wealth of the nation? We can best ascertain this by looking at the organisation of a large works, an engineering works for choice, since in such a works many workmen are employed who rank as skilled men. Begin with the moulding shops, for the moulder has been much in evidence of late. Here many men spend their working hours in making moulds for castings. The arrangement of the wood and metal patterns in the heavy cases rammed full of sand require both skill and experience, a skill which is often hereditary, since frequently a man's father and grandfather have been moulders before him. Possibly the moulder will have a partial, possibly an accurate, idea of the final use of the various pieces he moulds. On the other hand, he may never give it a thought. In any case, he is dependent on another workman for his patterns. He does not make the patterns in addition to moulding them, and if he could, the various unions would see to it that he didn't. That is another man's job. Patterns are made in the pattern shop, where joiners and turners are employed. This is skilled work, too. Much depends upon the accuracy with which they copy the drawings with which they are provided, and to read which requires both training and knowledge. Then castings have got

to be made, and the castings accurately finished by turning and filing and polishing. In their final form they go to the fitter who assembles the parts, and among whom there are sure to be men with a genuine taste for mechanics, and who cultivate their knowledge, while others are content to do what they have to do with a minimum of thought and understanding. And, under these men, are to be found the labourers who work for them—workmen's workmen, in fact—doing the rough and unskilled part of the work, tasks that require strength rather than intelligence, and can be performed by any man of muscle. These, then, are the men who are told that they alone have a right to the title of working-men, and that they alone, by their exertion, are the creators and, as the sole creators, should be the sole recipients of all wealth, a tale to which they are, not unnaturally, inclined to lend a ready ear. What have these different classes of workmen in common where their work is concerned? They have this in common, that the strength, or skill, or combined strength and skill, of each is employed in making or helping to make something in accordance with a design or pattern which is supplied to him by someone else, on whom, for the possibility of doing his work, he is entirely dependent. Who is this someone else? All these indispensable drawings and instruction designs come from the drawing office, where draughtsmen and designers work under the guidance of engineers. What place in the works does this office fill? Here is a quotation from an article on "Drawing Office Organisation," which appeared in the Transactions of the Society of Engineers about three years before the war, which will tell us something of this part of the business of which so much less is heard than of the workshops:—

"The drawing office is now the centre of the nervous system of a factory or works. Briefly stated, the drawing office staff to-day may be expected to draw up specifications and forms of estimate (possibly including prices), to make essential inquiries and calculations on receipt of an order, to lay out the necessary arrangements, to order patterns, materials, and special tools required, and to supply the factory with any explicit diagrams and instructions, and to watch opportunities for cheapening production. In all cases the drawing office is the centre of appeal on all matters appertaining to the technical branches of the work."

Evidently, then, the duties of the engineer and draughtsman who settle the main features of design have their place and value, and must, though the men in the office are neither mechanics nor labourers, involve work of some sort, and contribute to the task of production.

Nor are the shops and the drawing office the only departments to be reckoned with. Buying and selling must be taken into consideration. Without these your works will come to a standstill. So here we get another side of the business. Outside the workshops and the drawing office are other skilled and trained men—not workmen—yet performing what looks very like necessary work. Raw material has to be bought, and to the best advantage, for injudicious purchases may result in heavy loss; and the higher such expenses mount the less money is left to meet that very heavy item the weekly wages bill. Goods or machinery, once made, have to be sold, or, if made to order, despatched to their destination. Fresh orders must be obtained and markets found. In all this advertising plays its part. Nor is this the end of it. Accounts must be accurately kept, points where money runs to waste tracked down, and mistakes rectified. Correspondence has to be dealt with, inquiries answered, complaints met, and doubtful points decided. Foremen and managers are wanted, or so one would think; highly-trained engineers and chemists also. Heads of departments have to thrash out details of management and be responsible for them. A careful eye has to be kept on finance, so that the necessary cash is forthcoming at the right time for daily, weekly, and monthly payments, and for all the necessary purchases and renewals. And while money is going out it must be ensured

that a sufficient supply also comes in, and that there is a reserve to tide over difficult periods. Finally, at the head of all, must be some one man or group of men responsible for the general policy and working of the whole concern. And, as a necessary prelude to all this, either from some wealthy person or from a group of more or less wealthy people, or from an association of subscribers, not necessarily well off individually, capital has at some time or other been provided, or either capital raised to keep going or extend an existing business. Or perhaps, instead of borrowing, an energetic man or group of men who are possibly workmen of particular enterprise and ability, may have obtained with a little capital provided by their own savings, and with the extra capital afforded by their own skill, knowledge, and intelligence, and, adding to plant, stock, and buildings out of profits, have built up capital as they go along. If you examine the life history of any business, including a workman's co-operative association, you will find the same story. So it appears that in all businesses, great and small, besides the mechanic and labourer, there are many workers in other departments busy drawing, designing, accounting, buying, selling, despatching, corresponding, and making decisions, people whose labour, if it be true that manual labour is the sole essence of wealth, is quite superfluous. So either the owners and managers of capital, whose life's business it is to deal with money, know their moneymaking business so well that they pay unnecessary people to do unnecessary jobs, or else the labourer and the mechanic are mistaken in their estimate of their position, the idea, namely, that by their physical exertions they are the sole creators of wealth. It would almost seem as if they were mistaken, and that the truth is rather that, instead of forming the whole chain, they are, like the others, only links in it.

We have now considered the workman in his position in the task of production, and it has appeared that he is, with many others who are not classed as workmen, one of the links in a complete chain. After considering the nature of his task, we have to consider how he performs it. There we are confronted with a paradox so contradictory that the hydrostatic paradox alone seems comparable to it. It is this, that it is possible for an increase in the hourly rate of pay to result not in an increase, but in a decrease of output, whilst at the same time there is not necessarily any increase in the average total weekly wage earned. It would seem, and the notion is a disheartening one, that the British workman is apparently, in many cases, indifferent to earning more when it is in his power to do so, and indifferent to the advantages that more brings. I need hardly point out that in saying this I am referring to normal times, for we all want more now to meet the increasing expenses of daily life.

We get, then, this state of affairs, that an increase of wages may result not only in a decrease in the number of hours worked per week, but in the amount of work done per hour—in other words, with improved pay it is quite possible for the output to decline both relatively and absolutely.

In other words, an increase in wages often results in a decrease of effort. This is a disquieting fact; it is, I believe, a policy disastrous to the men themselves. What is the reason for this state of affairs, which was forcing itself upon our notice before the war? I cannot go into all the reasons—for it cannot be attributed to any one single reason—but will try to indicate what seems to be the chief.

There is to begin with the restriction of output enforced by trade unions as a matter of avowed policy, and under the belief that by this expedient competition between man and man by which only the employer benefits, is prevented, and wages maintained.

Then there is the idea firmly fixed in many of the men's minds that by restricting output they are creating work, though it is difficult to see how you create any work except unnecessary work, by not doing it! In this

way he thinks he is creating more work by distributing the work among more men, thereby helping his fellows and scaring away the spectre of unemployment. Also he feels that he is prolonging his period of employment by lingering on his job. Then there is the policy, not very openly avowed, of the men at the back of the Labour Movement—the tails who aspire to wag the dog—which aims at ruining the capitalist by raising wages and reducing output until the capitalist finds that his business no longer pays him, when the whole concern will fall into the workers' mouths, ripe for consumption. Then, again, important to us and ranking high as a cause of discontent, is the shortage of houses. Its origin is surrounded by political dissensions, its existence and results are plain, and will be touched on later.

Finally, I must mention the general feeling of unrest often attributed, and rightly in part, to the war—vague, ill-defined, yet none the less apparent. I think that it has another cause beside the war, which I have not yet heard referred to: the consciousness on the part of Labour that it has come of age, so to speak. Those of us who have come of age found when we did that the age of twenty-one wrought no magical effect in us, though our legal responsibilities were enlarged. Nevertheless, we were conscious of a change of some sort; we expected things to be different somehow; felt that we were entitled to be considered as "grown up," entitled to greater consideration and inclined to resent it if we did not receive it. We mayn't have deserved extra consideration, but we were annoyed if we did not get it. So, after all, there was a change, and the change reacted on others around us. I think Labour is permeated by a feeling of this sort, and with all this there is a consciousness on the part of Labour that it has been unduly exploited in the past and does not intend to be so exploited in the future. Unluckily the consciousness of this fact does not bring with it the knowledge of how to prevent its repetition; but be that as it may, this factor has to be reckoned with.

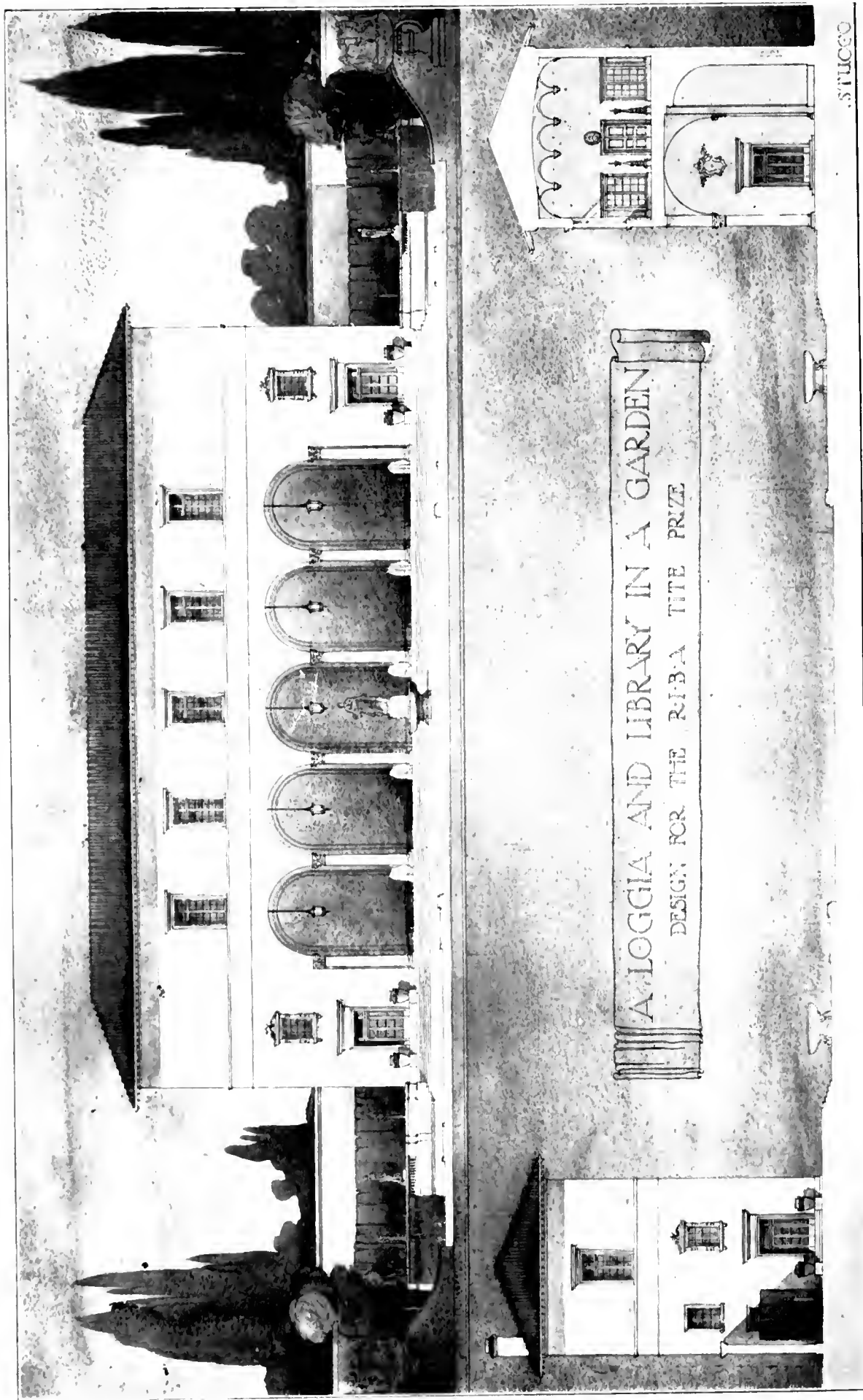
All the difficulties I have just enumerated were in existence before the war, and the position has since been made more intricate by the network of complications woven by the war. There is the question of the shortage of raw materials, manufactured goods, and food of all kinds consequent on a five years' suspension and disturbance of normal production. There is the shortage of shipping, caused partly by Germany's unrestricted submarine warfare, partly by the increased demands on the tonnage left, and the dislocation of transport caused by Government interference. With a shortage of ships come high freights. The abnormal state of rates of exchange for money between various countries is cited as another adverse factor, as is also the issue of paper money by so many countries during the war. On top of all this are strikes, the existence of "rings" and trusts, and general profiteering all round by master and men, too. I am afraid when they get the chance. Between those two millstones the unfortunate professional man is being ground.

(To be continued.)

COMPETITIONS.

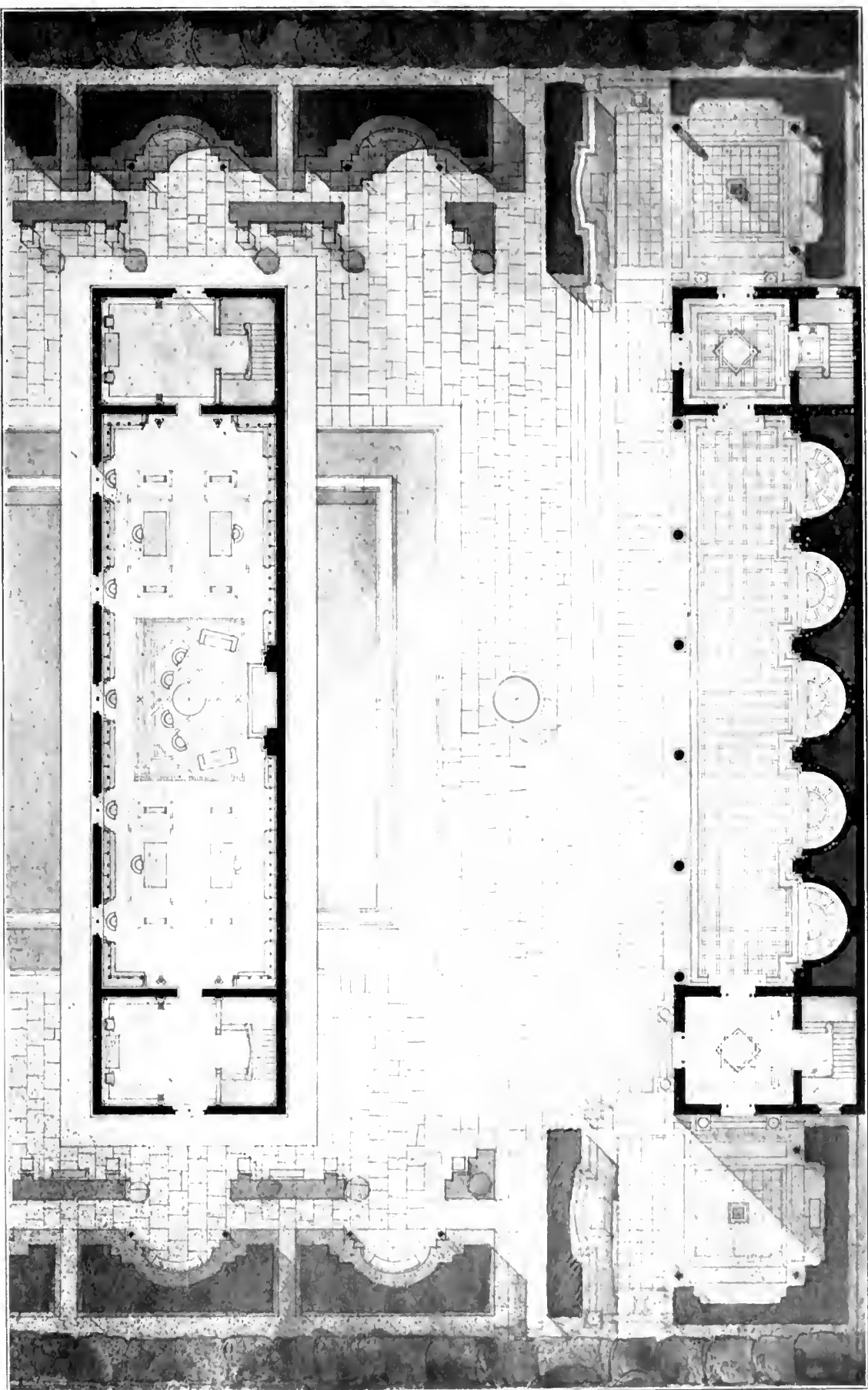
HORNSEY WAR MEMORIAL COMPETITION.—The Competitions Committee desire to call the attention of members and licentiatees to the fact that the conditions of the above competition are unsatisfactory, and the committee are in negotiation with the promoters in the hope of securing their amendment. Meanwhile, members and licentiatees are advised to take no part in the competition. Members of the Society of Architects are also requested not to take any part without first ascertaining from the Society that the conditions have been approved by the Council.

The President of the Architectural Association, Mr. Maurice E. Webb, and Council are giving a conversazione at the rooms, 34-35, Bedford Square, W.C.1, on Friday next, March 26, at 8.30 p.m. Dancing from 10 p.m. to 2 a.m.



THE TITE PRIZE DESIGN FOR AN ITALIAN LOGGIA WITH LIBRARY OVER, R.I.B.A., 1920.

By Mr. P. H. MELDRUM.



THE TITE PRIZE DESIGN FOR AN ITALIAN LOGGIA WITH LIBRARY OVER : PLANS.
By MR. P. H. MELDRUM.

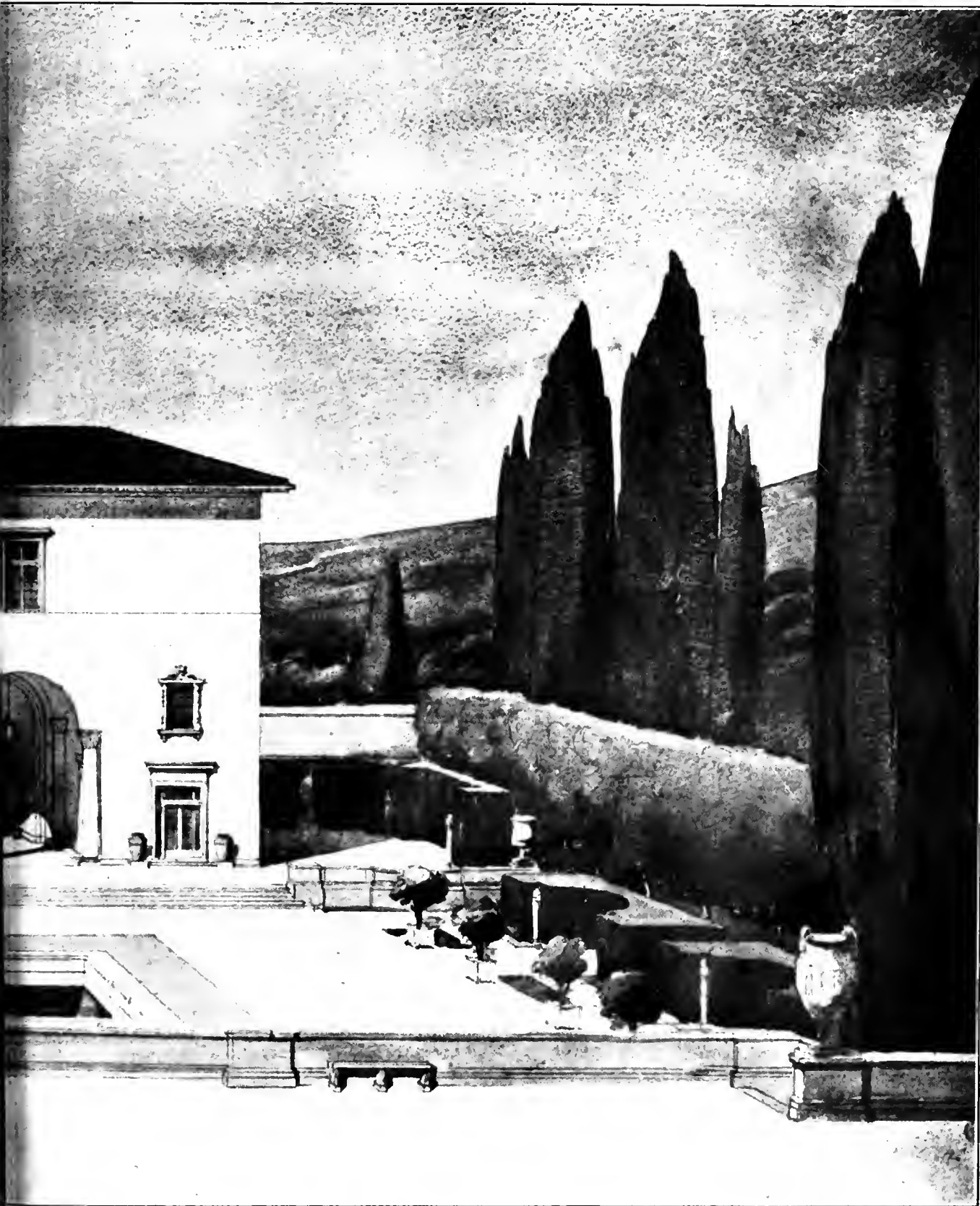
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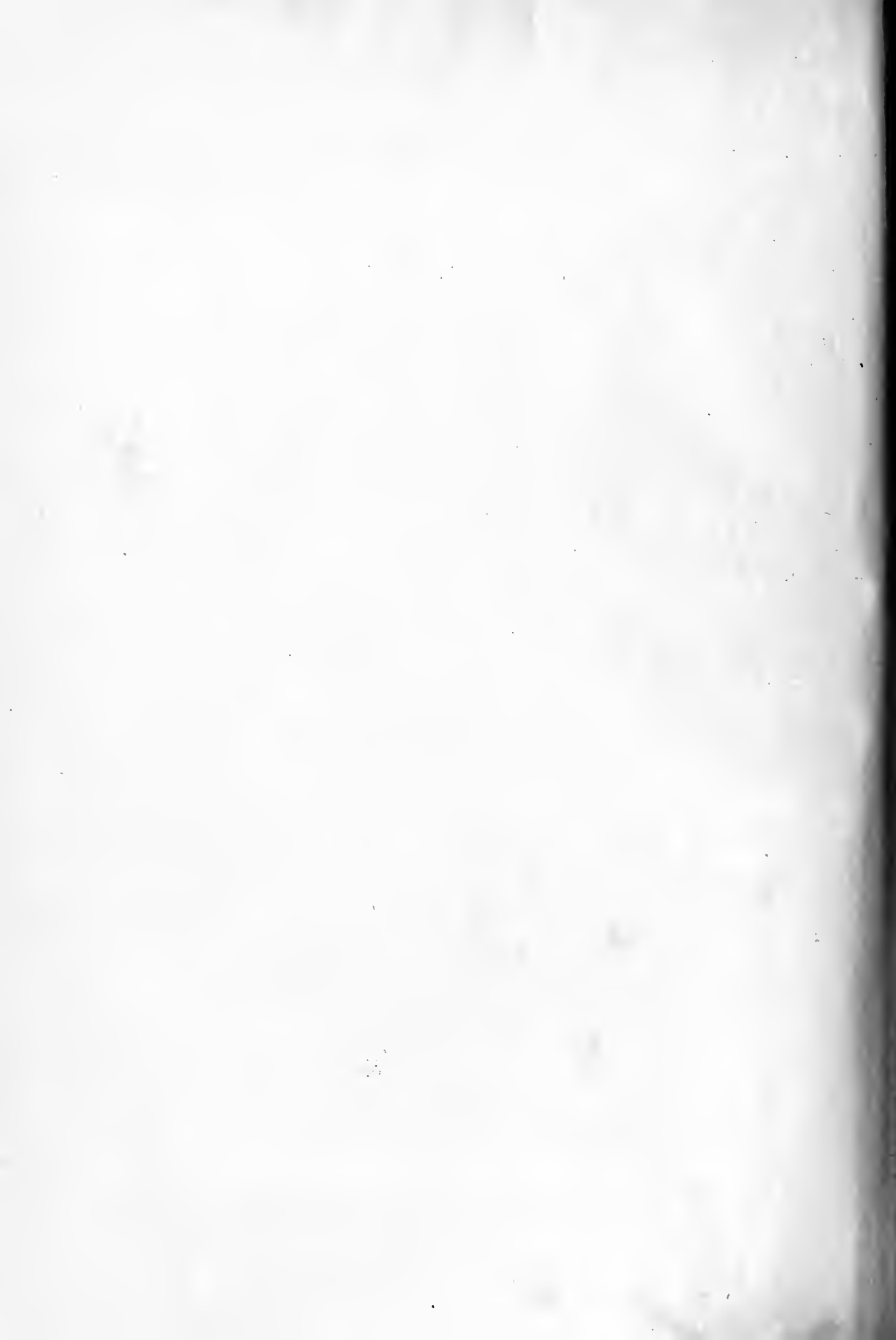


THE TITE PRIZE DESIGN FOR AN ITALIAN LOGG

MARCH 19, 1920

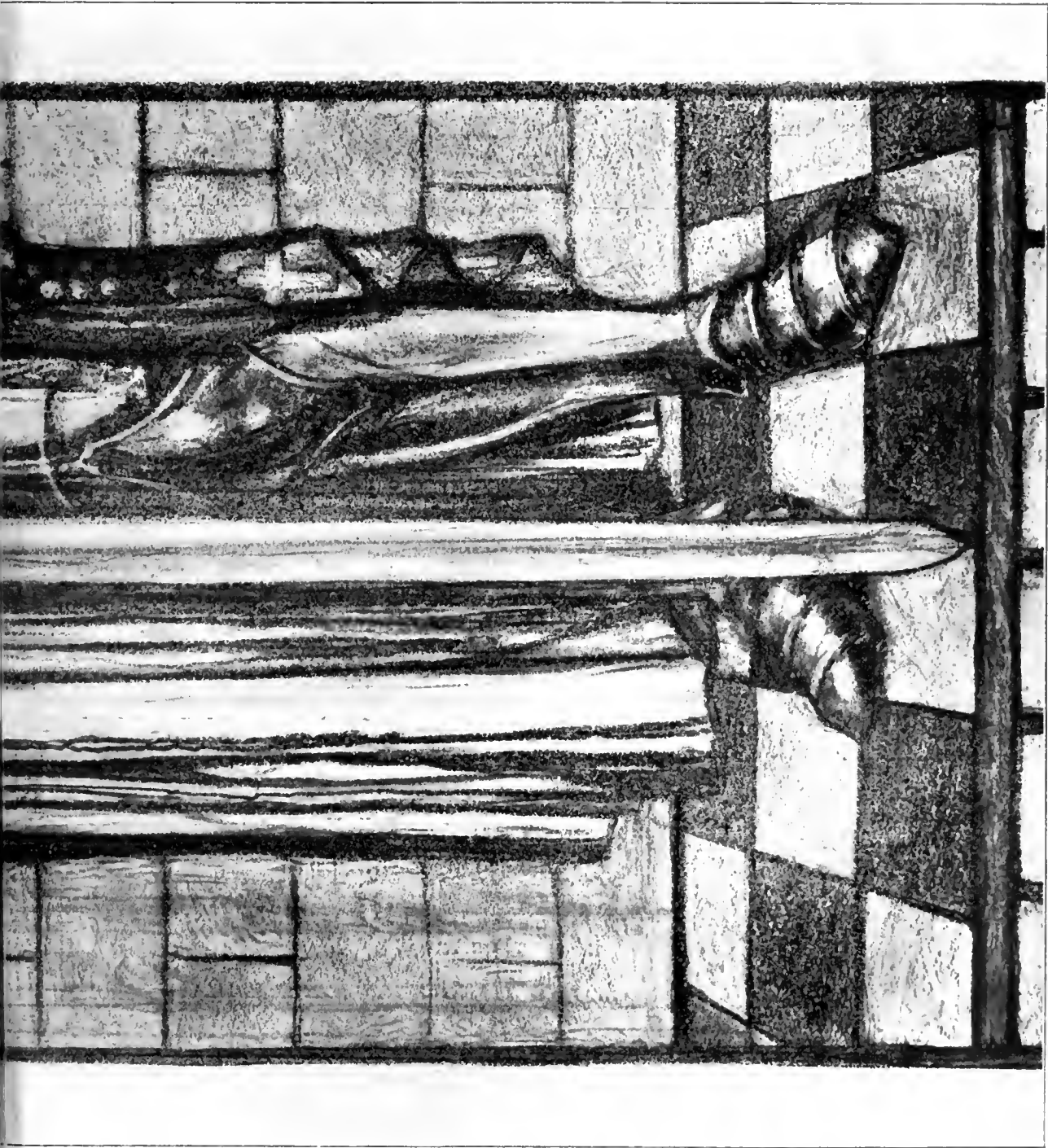


H A LIBRARY OVER.— By Mr. P. H. MELDRUM, 1920.



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JEANNE D'ARC : DESIGN FOR STAINED GLASS. A CARTOON.
By Miss RACHEL M. TANCOCK.



Our Illustrations.

THE TITE PRIZE: DESIGN FOR AN OPEN LOGGIA WITH A LIBRARY OVER.

This selected design marked by the motto "Stucco" is the work of Mr. P. H. Meldrum. Sir William Tite's Trust specifies that the Italian style is imperative, but the conditions particularised that the designs submitted in the competition must conform to the methods of Palladio, Vignola, Wren or Chambers. Some little difficulty was realised by the judges, but any other choice doubtless appeared out of the question. As a whole the scheme is clearly the most suitable of the series.

JEANNE D'ARC: DESIGN FOR STAINED GLASS.

This cartoon, designed and drawn by Miss Rachel M. Tancock, of Powis Square, was shown at the Royal Academy War Memorials Exhibition in the autumn of last year. The figure forms part of a stained glass scheme.

EXPERIMENTS ON THE HORIZONTAL PRESSURE OF SAND.

Recently the author made a series of experiments to ascertain the angle of internal friction in sand, clay, and other materials by loading a plunger of known diameter and measuring the penetration caused by known weights.

The conclusion he arrived at after experiment was that walls calculated by Rankine's theory, which assumes the "angles of internal friction" and the "angle of repose" to be the same, would have a factor of safety of from $2\frac{1}{2}$ to 4. In order to test this conclusion, a number of experiments were made in which the pressure of dried sand against a model wall was measured. The first experiments were made with a vertical door backed with sand and hinged at its lower edge, the tension in a string necessary to keep it in position being measured.

These experiments proved that the pressures calculated by Rankine and Colomb were much too high, especially for the surcharged wall.

At the same time experiments were made to test the wedge theory and to definitely ascertain if wall friction did actually affect the horizontal pressure or not.

The conclusions the author arrived at are:—

- (1) That the plane of rupture may be a convenient mathematical fiction, but has no existence in the granular matter dealt with.
- (2) That the angle of repose is a physical constant that relates only to the surface, and is represented in the interior of a mass of sand by the angle of internal friction.
- (3) That the angle of internal friction is not a constant physical characteristic for any one material, but varies with the state of its aggregation.
- (4) That friction between the back of a wall and its backing does not affect the amount of the resultant thrust.
- (5) That the wedge theory, which takes into account wall friction and the angle of repose, though giving correct results when applied to a wall without surcharge or with a negative surcharge, breaks down completely when applied to a surcharged wall.
- (6) That the wedge theory when modified by leaving out wall friction and introducing, instead of the angle of repose, the angle of internal friction, gives correct results in all cases, whether for the maximum thrust or that produced by individual wedges.

Finally, the author drew attention to the agreement of his experimental results with the earlier conclusions of Sir Benjamin Baker. —(P. M. Crosthwaite, B.A.I., "Proceedings, Institution of Civil Engineers, February 10, 1920.)

The twenty-sixth "James Forrest" lecture will be delivered at the Institution of Civil Engineers on Tuesday, April 20, at 5.30 p.m., by Sir Dugald Clerk, F.R.S., the subject being "Fuel Conservation in the United Kingdom."

Correspondence.

SIR FRANK BAINES ON THE ARTS AND CRAFTS.

To the Editor of THE BUILDING NEWS.

Sir,—Some very outspoken and fearless remarks were made by Sir Frank Baines when he recently addressed the manufacturers at the Ideal Homes Exhibition. He stated "that the Arts and Crafts movement was relatively of little influence in improving the standard of industrial design, since it dealt principally with handicrafts, and had left the British manufacturer unaffected; its whole tendency was to disregard the necessity of materially influencing the bulk production of commodities by the utilisation of machinery."

Some years ago I joined this movement, thinking I could lift my advertising and literature to a higher plane. I spent an afternoon attending one of their meetings in which fluent speakers made witty remarks, so that I, together with an artist friend who had accompanied me, had a very happy hour. I perused the literature which was sent to me, but could not digest it, because it was so extraordinarily dry. There was never a single hint of any value given to the manufacturer; everything was abstract—nothing was concrete.

If an artist with as much energy as Sir Frank Baines would devote himself to educating manufacturers, I think something would be achieved, but it would not be very remunerative employment financially.

Are we not progressing as quickly as one can expect for a northern nation such as ours, where we are so devoid of sunshine and colour during the dreary winter months? We have also a long way to go before we can catch up with France—quite apart from the climate—and we are apt to forget that we had hardly a scrap of architecture. "from which springs all art," until William the Conqueror brought his builders over to build his churches. We had, up to that time, only a few plain Saxon buildings. When we visit those marvellous later works of art in France, such as the church of Brou, near Maçon, which are just as intact as on the day when they were erected, and then think about the time when artistic progress was stopped in England by civil wars, the Puritans, etc., it makes one more satisfied when we see what London and many of our big cities can show in architectural buildings, and in the artistic displays which fill many of our shops.

And now I come to the reason I am addressing the Editor of an architectural paper. The architect, more than any professional man, is responsible for educating the taste of the public in arts and crafts, for by his work the mind and the eye of the citizen are unconsciously trained. Good architecture teaches him something of the rules of proportion and shows him the beauties of form and colour. Would not a great appreciation of art and craftsmanship accrue to the community if the best buildings were regularly illustrated and described in our daily newspapers and monthly magazines by architects who have the gift of lucid explanation? What does the average householder know about proportion, style, and dignity in architecture? Would he admire the gaudy, gilded hotels, restaurants, and music halls if he were trained even a little? It may be a matter ultimately for the Minister of Education, but he has more than he will get through for some years. In the meantime the architectural societies might co-operate with editors and proprietors of suitable media with a view to placing England in a few hundred years where Greece was two thousand years ago. Why not?—Yours truly,

J. H. KERNER-GREENWOOD.

ARCHITECTS' AND SURVEYORS' ASSISTANTS' PROFESSIONAL UNION.

Sir,—A rumour seems to be flying around that on the executive of this Union are representatives of practising architects and

surveyors. I trust you will allow me space to contradict this damaging report. The practitioner is not eligible for membership of the Union, except in a purely honorary, non-voting capacity, and members establishing their own practices must revert to this class. The executive is composed of members of the Union in every way eligible for such membership.

There is another point for which I would crave a little of your space. Many gentlemen seem to be afraid to join us in case we should become "extreme." We have shown little signs of this so far, and it is certainly the desire and hope of the present executive to pursue nothing but a moderate, yet not the less effective, programme of reform. May I point out to such gentlemen that the so-called "extreme" or "advanced" members of a trade or profession will always be among the first to join such a movement as ours, be the programme ever so moderate. The surest way to maintain a moderate course for us is for those who stand outside and tremble to come boldly in and assert their membership. Inside they have the helm very largely in their own hands; outside they have no power at all; and if they believe it in the best interests of the professions that we do nothing extreme, they should show their loyalty to such by joining us.

CHAS. McLACHLAN.

Hon. Secretary, Architects' and Surveyors' Assistants' Professional Union.

34 and 35, Bedford Square, W.C.1.

PROFESSIONAL AND TRADE SOCIETIES.

ARCHITECTURAL ASSOCIATION OF IRELAND.—Mr. George Beckett, F.R.I.A.I., the President, presided at a meeting of the Architectural Association of Ireland on Tuesday, March 9, 1920, in Dublin, at which an interesting lecture, entitled "A Method of Cottage Construction in Reinforced Concrete," was delivered by Major J. H. Waller, D.S.O., who has invented a system of pre-cast concrete slab construction. The lecture was illustrated by slides showing constructional details, and exterior and interior views of houses already erected on this system. At the conclusion a cordial vote of thanks to the lecturer was proposed by Mr. R. Caulfield Orpen, R.H.A., and seconded by Mr. George O'Connor, F.R.I.A.I.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.—The eleventh general meeting of the session was held at the Associations' Rooms, Royal Society of Artists Buildings, New Street, Birmingham, on Friday, March 12, 1920. The President, Mr. H. T. Buckland, F.R.I.B.A., occupied the chair, and 37 members were present. Mr. Gerald McNichol, A.R.I.B.A., gave an interesting paper on the B.A.A. excursion to Ludlow. Soon after arrival a general preliminary tour of the town was made, including a visit to the church and the timbered cottages at Ludford. The following day an inspection was made of the old Grammar School, a place of early foundation, having been established by the Palmer's Guild in the thirteenth century. Here an interesting adjoining building has been taken over by the Governors, and is now used in connection with the school. Some recent additions have been made, but the old schoolroom is quite an interesting building. The Archdeacon's house and the Reader's house were next visited; the garden of the former adjoins the castle and is very picturesque. The latter is an interesting old half-timbered and stone building, overlooking the churchyard. The main part of the house was rebuilt in Tudor times, and is built of massive oak beams with wattle filling. The plaster ceilings and panels on the walls show the pomegranate of Catherine of Aragon, the Tudor Rose, Fleur-de-Lys, and other emblems connected with the history of Ludlow. The carved three-storied Jacobean porch was added in 1616, and is a very fine piece of work. The Castle, which dominates the town, consists of a very noble pile of grey, ivy-covered buildings, with a great Keep or Donjon Tower, pierced with narrow arched openings, dating from Norman times; and in the centre of the courtyard, detached from the rest, is a circular twelfth century chapel

with enriched semi-circular headed west doorway. St. Lawrence Church is said to be one of the finest in Shropshire. It is in the Perpendicular style, built in red sandstone, and has some reticulated tracery work in the windows. It is well situated in the centre of the town, with a commanding Perpendicular tower. Recent additions consist of a stained glass window on the north side, and a new oak pulpit, both of good design and workmanship. A visit was paid to Stokesay church and castle, which is half fortalice and half manor house, and is situated in a restful valley surrounded by charming woodland. The Castle gatehouse and church are well looked after, and repay careful inspection. The church has some fine woodwork of the Jacobean period, including a canopied pew and oak pulpit, also some good lettering on the walls. The numerous lantern slides by which the lecture was illustrated added greatly to the interest, as they often conveyed more than words were able. A hearty vote of thanks was proposed to the lecturer by Mr. G. Silk, and seconded by Mr. H. G. Hawkes.

Our Office Table.

At the annual general meeting of the London Society held at the Royal Society of Arts, John Street, Adelphi, last Friday, Sir Aston Webb, P.R.A. (chairman of the council), who presided, said that the society's book on the future of London was well on the way. He noticed that in the report it was called "The New London," but they did not want to make a new London, but to consider its future and find out how it could be enlarged without destroying old London. He hoped the book would be named "London of the Future." With regard to the improvement of Charing Cross, the society was making some progress, but he was not permitted to say what was being done. An interesting scheme by Mr. John Murray had been published, but whatever scheme was approved, the society hoped that Adelphi Terrace would not be interfered with. Adelphi Terrace was a very charming result of Adam's work. Alluding to the memorial scheme for the improvement of Westminster, Sir Aston Webb said he had been asked to join the executive committee, but he had declined to do so because it did not seem to be a scheme that should be supported by practical men. He did not think the scheme suggested was the right way to carry out the improvement he desired to see.

"Calculating Diagrams for Design of Reinforced Concrete Sections," by James Williamson, A.M.I.C.E. (London: Constable and Co., Ltd., 10, Orange Street, W.C.2, 12s. net), is one of the most useful books of its kind we have yet seen. They are evidently the fruit of sound personal experience, and cover all the essential elements. They will reduce the time and labour spent in design and furnish a simple and more direct system of dealing with the comparatively difficult cases of doubly reinforced members and sections subject to combined stresses, the ordinary formulae for which are often too complicated for ordinary office use, and seldom adapted to direct solution. The seventeen diagrams are clearly drawn to a good scale, and the author's method, which he details in the preface, certainly lightens labour and makes for the rapid attainment of an economical design.

With a view to putting an end to American architects practising in British Columbia, the architects of the province have a bill before the Legislature which provides incorporation for an architectural institute, and also protects Canadian architects. The clause which debars American architects from practising is as follows:—"An architect seeking admission under this Act, who is a citizen of a foreign country or state, shall be admitted to practise architecture in this province on passing such an examination as may be prescribed by the council; provided that such foreign country or state of which he is a citizen recognise the standards of qualification set out herein on an equal footing with their own, and admit the members of

this institute equally with their own citizens."

A White Paper has been issued showing the rise in prices of the principal building materials. A noticeable feature is the large increase which has taken place between July, 1919, and February, 1920, in the case of many commodities. Turpentine, for instance, is dearer by 100 per cent., stock bricks by 17.6 per cent., sheet lead by 78.6 per cent., kitchen ranges by 28.4 per cent. Linseed oil and the material for damp-proof courses alone have become cheaper in this period, but some other prices have remained stationary.

LIST OF TENDERS OPEN.

COMPETITIONS.

- Apl. 30.**—For designs for the lay-out of the Commercial Street and Ward's Hill area as a shopping centre for the Corporation of Batley.—Prize money of £100, £75, and £50 for the first, second, and third premiated designs respectively.—Mr. H. L. Hall, borough engineer and surveyor, Town Hall, Batley.
- July 31.**—For designs for the City of Sheffield Proposed War Memorial Hall, for the City Council. Sir Aston Webb, P.R.A., and Mr. F. E. P. Edwards, Assessors. The selected architect will be recommended in accordance with the R.I.B.A. schedule of charges, and prize money of £250, £150, and £100 respectively will be paid to the authors of the designs placed second, third, and fourth. Plan of site and conditions will be supplied on application, with deposit of two guineas, returnable on receipt of bona-fide design, to Mr. William E. Hart, Town Clerk, Town Hall, Sheffield.

BUILDINGS.

- Mar. 22-29.**—For 16 houses at Compton Martin.—For the Clutton Rural District Council.—Architects, Messrs. Thomas and Morgan, 23, Galiwastad Road, Pontypriid.—Tenders to J. S. Dury, clerk, Temple Cloud, Bristol.
- Mar. 23.**—For 100 houses.—For the Ilford Urban District Council.—Tenders to A. Partington, clerk, Town Hall, Ilford.
- Mar. 25.**—For 18 houses on the Wells Road, site No. 2, Nottingham.—For the Housing Committee.—Architect, W. V. Betts, Bank Chambers, Basford, Nottingham.—Tenders to W. J. Board, town clerk, Guildhall, Nottingham.
- Mar. 25.**—For six houses.—For the Dorchester Rural District Council.—F. I. Maltby, C.E., M.S.A., architect, Dorchester.—Tenders to W. Wilton Reed, clerk, 24, High West Street, Dorchester.
- Mar. 25.**—For six houses at Little Oakley.—For the Tendring Rural District Council.—Architect, G. Rowbotham, The Moorings, Felixstowe.—Tenders to A. J. H. Ward, clerk, 42, Church Street, Harwich.
- Mar. 25-30.**—For erection of four blocks of flats (30 in all) at Hazellville Road site, Upper Holloway, and erection of one block at addition to and conversion of No. 9, Wartersville Road, Crouch Hill (20 flats in all).—For the Islington Borough Council.—Architect, E. C. P. Monson, F.R.I.B.A., F.S.I., Finchbury Pavement House, London, E.C.—Tenders to C. G. E. Fletcher, town clerk, Town Hall, Islington.
- Mar. 25.**—For a new fire station, recreation room, and engineer's houses, on the Council's land at Low Town, Oldbury.—For the Oldbury Urban District Council.—Tenders to P. A. Grigg, clerk.
- Mar. 27.**—For cottages.—For the Axbridge Rural District Council.—Architect, T. Bradford Ball, 75, High Street, Weston-super-Mare.
- Mar. 27.**—For the mason, joiner, plumber, plaster, slater, and glazier works required in the proposed reconstruction of tenement No. 15, King's Stables Road, and that in one contract.—For the Edinburgh Town Council.—Plans and specifications by J. A. Williamson, A.R.I.B.A., Public Works Office, City Chambers, Edinburgh.—Tenders to A. Grierson, S.S.C., town clerk, City Chambers, Edinburgh.
- Mar. 29.**—For 58 houses (together with drains and fencing in connection with same) on the Weston site.—For the Runcorn Rural District Council.—Architects, Wright and Hamlyn, Sankey Street Chambers, Warrington.—Tenders to G. F. Ashton, clerk, 71, High Street, Runcorn.
- Mar. 29-31.**—For alterations and extensions to Nos. 74 and 75, Fleet Street, and Nos. 2 and 3, George Street, Torquay.—For W. H. Smith and Son.—Architects, Watson and Watson, 36, Torwood Street, Torquay.—Tenders to the Architects.
- Mar. 30.**—For 50 houses.—For the Loughton Urban District Council.—Architect, H. White, F.R.I.B.A., High Road, Loughton.—Tenders to L. W. Liell, clerk, Council Offices, Lopping Hall, Loughton.
- Mar. 30.**—For semi-permanent secondary school.—For the Barrow-in-Furness Education Committee.—Tenders to L. Hewlett, town clerk.
- Apl. 2.**—For 10 houses at Northolt, 12 houses at Ickenham, 32 houses and roadwork, etc., at Harefield Park, and 68 houses and roadwork, etc., at Harefield Common.—For the Uxbridge Rural District Council.—Architect, R. S. Bowers, 27a, Bush Lane, Cannon Street, London, E.C.—Tenders to the Clerk of the Council, 38, High Street, Uxbridge, Middlesex.

- Apl. 3.**—For about 60 houses in Helensburgh.—For the Town Council.—Tenders to J. B. Mac-lachlan, town clerk, Helensburgh.
- Apl. 7.**—For further houses on the Sherwood site, Nottingham.—For the Housing Committee of the Corporation.—Architect, W. A. Kneller, 12, Victoria Street, Nottingham.—Tenders to W. J. Board, town clerk, Guildhall, Nottingham.
- Apl. 7.**—For 36 houses in the various townships in their district.—For the Sefton Rural District Council.—Architect, E. B. Bailey, 37, Moorfields, Liverpool.—Tenders to H. P. Cleaver, clerk, Council Offices, Brougham Terrace, Liverpool.
- Apl. 12.**—For 40 houses upon a site in the district.—For the Biggleswade Urban District Council.—Architect, T. Cockrill, Biggleswade.—Tenders to the Council Offices.
- Apl. 12.**—For wagon building works at Faverdale, Darlington.—For the North Eastern Railway Co. A. Pollard, the Company's architect, York.—Tenders to the secretary, York.
- Apl. 14.**—For 28 houses on Longford Road site, Newport (Salop).—For the Newport (Salop) Urban District Council.—Architect, J. H. Shaylor, F.R.I.B.A., 9 and 10, Gateway Chambers, Shrewsbury.
- Apl. 15.**—For houses.—For the Bakewell Rural District Council.—Architect, C. Flint, 5, The Quadrant, Buxton.—Tenders to A. Ilawes, clerk, Union Offices, Bakewell.
- Apl. 15.**—For houses.—For the Housing Committee of Andover Town Council.—Tenders to town clerk, Andover.
- No Date.**—For alterations and additions to the Berks Farm, Hodthorpe, Whitwell.—For the Derbyshire County Council.—Architects, W. H. Wagstaff and Sons, Saltergate, Chesterfield.—Tenders to N. J. Hughes-Hallett, County Offices, Derby.

CHIPS.

Asked on Tuesday whether he would consider the popularising of housing bonds by making them a form of lottery bonds, Dr. Addison said the House had given a decision in regard to that subject, and he could not do as was suggested.

The Building Trades Council has invited the operatives to agree—as soon as the 44-hour week comes into force in May—to work an extra hour above the average eight-hour day without extra overtime payment in order to show their desire to support housing schemes.

A memorial in bronze, in honour of those sons of the school who have fallen in the war, is being provided by the Holt Secondary School. The memorial has been designed by Mr. Harold Bradshaw, at one time a pupil at the Holt, and now Lecturer in Architecture at the University of London.

Mr. J. W. Gilbert, a member of the London County Council for the past twelve years, has been unanimously elected chairman, in succession to Lord Downham. Mrs. Wilton Phipps was appointed to the vice-chair, this being the first time that a lady has been elected to such an office on the Council. Mr. G. M. Gillett was elected deputy-chairman.

The death occurred suddenly of Mr. John Pritty, C.E., Burgh Surveyor of Selkirk, at his residence early on Saturday morning, through heart failure. Mr. Pritty, who was 60 years of age, occupied the position of surveyor for the burgh of Selkirk for 34 years. He is survived by a widow and a grown-up family, one of his sons being burgh surveyor of Prestwick.

At the 18th annual dinner of the London Master Printers' Association on Tuesday, Mr. Pett Ridge said the charges of the printers were likely to drive authors back to the old illuminated manuscripts, but few novelists were fitted for a monastic or celibate life. He warned them, however, that there might come a time when no one would be able to afford to buy books except the master printers who printed them.

The Manchester Housing Committee, which sat for two and a-half hours on Monday, recommended the appointment of Mr. Lewis Watson as manager of direct works under the corporation at a salary of £750. Mr. Watson is secretary of the Operative Bricklayers' Society in the Manchester area, and is chairman of the National Executive of the Bricklayers' Society. He is closely associated with the Manchester Building Guild Committee.

Mr. Edward M. Smith has died at Spalding at the age of 74, after only a week's illness from pneumonia, following on influenza. Mr. Smith was a designer and manufacturer of stained glass, and many churches and other public buildings contain specimens of his work, among them being Chelsea Hospital and St. Margaret's Church, Lynn. Windows in the Congregational Church, Spalding, were designed and made by him. He was a member of the Spalding Gentlemen's Society, which claims to be the oldest antiquarian society in England.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

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OUR ILLUSTRATIONS.

Proposed new range of buildings, including "The New Gallery Kinema," 115-131, Regent Street,

Strand, W.C.2

W. Mr. Frank T. Verity, F.R.I.B.A., architect.
 Drawings of draped figures, stained glass studies (facsimiles) by the late H. W. Lonsdale (1846-1919).
 A Chemist's Shop, Lower Sackville Street, Dublin. (Destroyed Area, 1916.) Mr. W. Sedgwick Keatinge, M.R.I.A.I., architect.
 War Memorial Crosses, Long Sutton and Fleet, Lincolnshire. Lieut.-Col. J. E. Dixon-Spain, F.R.I.B.A., architect.

Currente Calamo.

So far, the result of the meeting of the R.I.B.A. on Monday leaves little to be desired. With a trifling exception, the responses of all the speakers were in fit accord with the tact and perspicacity with which Mr. J. W. Simpson, the President, conducted the proceedings, encouraging the hope that his term of office may ensure a similar continuance of the accord which characterised Monday's meeting, and the realisation of the task which the Institute has invited all concerned to attempt with it.

It is clear from Mr. Lloyd George's reply to Mr. Myers, which has been circulated this week, that the trade unions are deliberately preventing the entry of workmen into particular trades, and not only retarding the developing of housing schemes, but are resolved to limit the number of entries by apprenticeship, the old and best means of meeting the naturally increasing demand for skilled labour. Apart from rules as to apprenticeship, the question of the augmentation of the supply of building labour is affected, not so much by specific regulations as by adherence to practice and custom. Although it is admitted that there is an insufficiency of apprentices in the building trade, and many ex-service men are available, up to the present the age limits for the admission of apprentices to the building trade have not been altered; and, while agreeing in principle to the training of disabled ex-service men, the building trade unions have more than once definitely refused to consider the admission of any other classes of adults to skilled trades. From the detailed particulars given it is evident that much of the "skilled labour" available at present is due to the fact that in some of the trades, notably the bricklayers, glaziers, and plasterers, the men are largely recruited from boy or adult labourers who have never learned their trade properly, and the most important shortage exists among the bricklayers, in which the age of entrance is highest and the period of training is the shortest. One result is the diminution of output so often commented on. That all such men can do could be done by any intelligent adult after a comparatively short period of training, has been proved, and that the

demand for such labour is urgent is equally evident. This training it is deliberately sought to hinder. For instance, in London the plumbers have refused to allow disabled men when trained as plumbers to be employed in any but an unskilled capacity. At Bristol the local branch of the Operative Bricklayers' Society have refused to allow men trained as bricklayers to be employed, and elsewhere branches of this society have objected to men being placed in training as bricklayers. Local branches of the Carpenters' and Joiners' Society have in some areas refused to co-operate in the training or have obstructed the placing out of trainees; in the case of carpenters and joiners there is good reason to think that explanation and argument will remove the objections. If that is futile as regards the other trades, something will have to be done to enable any man who chooses to acquire the skill to use his brains and hands without interference, or compulsory subjection to needless and wanton strikes.

The somewhat abstruse recommendations of the Income Tax Commission Report will, we hope, be straightened out in the Budget, or in the separate Act which will probably have to be passed. Generally, there is not much relief vouchsafed to the hardest hit of all, the middle classes, and the temporary relief of the many sufferers of injustice caused by the ridiculously small allowances for repairs to property is shamefully inadequate. The Commissioners are of opinion that the present allowances of one-sixth and one-eighth of the annual value should be retained as the normal uniform rates; but that for a period of five years an allowance of one-fourth should be made for houses not exceeding £20 in annual value, and one-fifth for those not exceeding £40, provided proper repairs are made. When once again conditions as to rental and the cost of repairs have become stabilised, an inquiry is to be made to ascertain what should be the future uniform rate for different classes of property. This low limitation of value is surely unfair! In future, £40 will be a low rent, and the allowance for repairs ought to be increased in respect of houses of a much higher value. Repairs will be dear for a long time, if they ever fall to the old level, and property owners had better at once organise a vigorous agitation for

better treatment than that proposed by the Royal Commission.

Another long discussion about the Selfridge bungalows kept the Acton Council sitting late at its last meeting. Councillor Carter, in opposition to the recommendation of the Town Planning Committee, moved that they should not be purchased. This was seconded by Councillor Orange, who insisted that the town would be saddled with a scheme, costing between £70,000 and £80,000, that would cripple their own building operations. A desultory discussion followed, in the course of which some uncomplimentary things were said about the bungalows. The Chairman, Councillor Hamilton, said the Council would have either to sell or lease the land to Mr. Selfridge, who would then have to work to the specification of the Ministry of Health, often inferior to those usually insisted on by the local authorities. Councillor Wakelield said the houses were more like clinker than concrete houses. Councillor Miss Smees wanted Comrade Barnes' opinion. Councillor Barnes, replying to "Sister Smees," said he thought they were "going to be very nice indeed"; in fact, the rooms would be six inches higher than those at Henley. The Surveyor said the accommodation was practically the same as at Henley. The Surveyor also said he believed he would still exercise the right of supervision if the Council rejected the scheme, and he could, if necessary, refuse to give his certificate entitling the company to the Government bonus. A little doubtful, perhaps, as he admitted that the Ministry of Health was prepared to accept a much lower standard than he was. The motion not to purchase the bungalows was carried, and, as regards the future of the land, it was unanimously agreed that it should only be leased to Mr. Selfridge.

The death is announced on March 17, at 10, Gloucester Gate, Regent's Park, of Mr. Anthony George Lyster, second son of the late George Fosbery Lyster, of Plas Isaf, Ruthin, and Prince's Park, Liverpool, and partner of Sir John Wolfe Barry, Lyster, and Partners, engineers, in his 68th year.

The Bishop of Kingston on Sunday dedicated a reredos erected in Holy Trinity Church, Tulse Hill, to the memory of eighty-two men who fell in the war, and in gratitude for the safe return of 530 who served; and oak communion rails in memory of Mr. J. C. Lovell and of members of his family who lost their lives in the war.

COAL-MINING AND THE COAL MINER.

We have read with considerable interest a timely volume by Mr. H. F. Bulman, M.I.Min.E., Assoc.M.I.C.E., F.G.S., published by Messrs. Methuen and Co., Ltd., 36, Essex Street, W.C., at 15s. net, and advise all fair-minded readers to do so. The author has been a colliery manager and a director of colliery companies, and has lived many years amongst working miners, and knows their work and their good qualities. He is evidently fully acquainted with the vicissitudes of the industry during the past thirty years: his tone is judicial and his conclusions seem to us irrefutable. They establish two facts: first, that the profits of the colliery owners, most of whom are small shareholders, are considerably less than are obtained in many other industries; and next, that to the restrictive policy of the Trade Unions and the effects of recent legislation are almost entirely due the decreased output of coal and the big rise

was being done to provide good houses with pleasant surroundings in nearly all the mining districts of the country. Mr. Fulton gives in detail plans and dimensions of some of these houses, and full particulars as to cost and accommodation.

This section of the volume we particularly commend to the attention of our own readers, because it emphatically confirms our own conclusions, repeatedly set forth in our own pages, that to mischievous legislation and the unfair increase of local rates, especially on small house property, the present house shortage is by the far greater part primarily due. While our population and the demand for houses has steadily grown, building enterprise has been paralysed. In 1901, with a population of England and Wales numbering 32,500,000, the number of houses in the course of building was 61,909; but in 1911, with a population increased to 36,100,000 the dwelling houses in course of erection only totalled 38,178. In 1901, more than a million men were en-

to higher rateable values. If a cottager puts a bath into his dwelling, he is rated the more for it than his less clean and tidy neighbour. In some mining districts the rates constitute as much as 37 per cent. of the rents of the miners' cottages. An instance is given by Mr. Fulton where the rates are two shillings a week on cottages rented at 5s. 6d. a week, and 2s. 6d. on others, the rental of which is 6s. 6d.

That the colliery owners have done more than most employers to improve the dwellings of their workers is evident. Sir Hugh Bell recently called attention to the fact that of the £1,300,000 capital employed in the enterprises of the Horden Collieries, Ltd., which is developing large new collieries in South-East Durham, no less than £500,000 had been spent on houses for the men. Comparison of the miners' houses and miners' villages of to-day with those of forty or fifty years ago will prove to any observer the steady progress of improvement, all due directly or indirectly



FOUR MINERS' COTTAGES AT GUISBOROUGH, CLEVELAND.

in its price. It is difficult to make out why Parliaments and Governments can have failed to see this, or why, in the face of the facts given, verse and chapter, our ministers and legislators should at the present time be meditating fresh interference, which will prove as disastrous as in the past, solely in deference to agitators of the sort who appeared before the Coal Commission. That conclusion may, of course, be challenged by people who "know better"—that is, who have never taken the trouble to sift truth from falsehood. It is not within our province to deal further with the matter generally, but most readers will remember that the miners' representatives before the Coal Commission did their utmost to create prejudice very unfairly against colliery owners by blaming them for the alleged bad housing of the miners. The truth is that, as given in evidence before the Coal Commission, during the ten years 1904-14, there was spent in purchasing, or building or in improving miners' houses in Durham and Northumberland, £2,567,000, and until the war stopped further progress much had been done and

gaged in the building industry, but in 1911, when the next census was taken, though the population had grown by 3,600,000, the number of men so employed was less by 96,737. During the ten years, 1903-13, ninety-nine per cent. of the workmen's houses had been built by private enterprise. Today, when private enterprise was systematically crippled and flouted by Government, with the result that the "economic" rent of the workman's home is to be raised to a pound a week and rates to match, the Health Ministry is making frantic attempts once again to tempt private enterprise to come to the help of the houseless.

Such appeals will be too late in many cases. House property is no longer the attractive investment it was. One hostile cause is phenomenal and unfair growth of local rates during the past twenty years, the bulk of which is levied on buildings and for services such as poor relief and education, which are in the interest of the whole nation, and do not in the least enhance the value of the property on which the rates are levied. Higher rates lead to higher rents, and these, of course,

to private enterprise. Forty or fifty years ago the best cottages consisted in general of three rooms, namely, a kitchen, a room above, and a small room behind, under a sloping roof. In 1875, houses regarded then as manifestly a long step in advance of their predecessors, provided on the ground floor a kitchen-living-room, 18 ft. by 15 ft., a kitchen-scullery, 13 ft. by 9 ft., and a pantry 3 ft. by 7 ft. 6 ins., and a second bedroom upstairs, 4 ft. 6 in. by 12 ft., taken out of the available area by a light partition, leaving one fair-sized room. The miner's cottage of to-day has five rooms, namely, a kitchen, with a scullery containing a copper, and a parlour on the ground floor, with water-closet and coalhouse in the yard behind, and three bedrooms upstairs, and a bathroom. These in 1914 averaged about £200 each, or fourpence per cubic foot, for building only, and not including land, drainage, water supply, fencing, architect's fees, etc. Four classes of houses were thus built, certain features being common to all. Brick is the material used in all, the outside walls are 11 in. cavity walls, and the inside 9 in. solid brickwork. The

roofs are second quality Bangor slates, 14 in. by 10 in., laid with a lap of 2½ in. All houses have back yards; earth closets are preferred to water closets. In all the houses all the rooms are 9 ft. high, electric light is supplied at a charge of 6d. or 8d. a week, water gratis. Plans of all four types are given.

We give an illustration of a block of miners' cottages, built at Guisborough, in Cleveland, to the design of Messrs. Hedley and Douglas Pollock, architects, of 15a, Baker Street, W., erected in 1913, the cost, exclusive of land, architects' and law costs, was for the two end houses about £220 each, and for the middle houses about £200 each. Each house has a parlour, kitchen, scullery, and bathroom, with hot and cold water, on the ground floor, and three bedrooms above. The materials are common-brick walls, unplastered on the inside, and colour-washed externally and internally. The total cost worked out at about fivepence per cubic foot. The two end cottages are

many pit villages consist. There are no ash-pits or refuse heaps, each house being provided with an ash-bin, which is emptied three times a week. No yards or outhouses form harbourages for dirt and refuse. Generally, the fronts and backs form unbroken lines, and there are no projecting buildings to shut off light and air. Most of the houses have flower-gardens in front, and the Company gives prizes yearly for the best kept. All the houses are provided with three bedrooms, each having a fireplace, with scullery, pantry, coalhouse, and water closet. The smallest-sized houses, the rent of which is 5s. 6d. per week, contain each, besides the above mentioned accommodation, one large kitchen room. Those of the next size, rented at 6s. 3d. per week, have each, in addition, a parlour. For 6s. 9d. a week a separate bathroom with hot and cold water is supplied. A still larger house is provided for the colliery officials for 7s. 6d. per week. All rents cover water supply, rates and taxes, and repairs. The mansion

but the company had the well-deserved advantage of a good bed of firebrick clay close to the works, capable of yielding 300,000 bricks a day.

Some interesting plans and particulars of other villages where the collieries have done well by their workmen: At the Maltby and Rossington Collieries in South Yorkshire, about six miles apart, some 800 houses have been built, some costing at pre-war prices about £250 each for building alone, and let at 6s. 11d. per week; others costing 185, rental 6s. 9d. weekly. The Yorkshire Main Colliery Company are laying out a scheme at Edlington, near Doncaster, providing a total of 1,200 houses, some at 5s. 6d. a week, and others at 6s. 9d., 7s. 6d., and 8s. 6d., all free of rates and taxes. Bolsover, in Derbyshire, always a pleasant pit village, has some good houses let at from 4s. 3d. to 5s. 9d. a week. Crosswell, six miles north-east of Bolsover, and Mansfield, all three belonging to the Bolsover Colliery Company, have good houses.



WOODLANDS VILLAGE.

let at 7s. 6d. per week, all rates, as well as water charges, being paid by the owner.

The other illustration, of the Woodlands Model Village, laid out by the Brodsworth Main Colliery Co., Ltd., under the guidance of their late Chairman, Sir Arthur Markham, Bart, M.P., is a unique colliery village, both as regards its natural advantage and its layout. The site is a well-timbered estate, with some fine old trees, and includes a mansion house and a lake. On it, well distributed over the whole estate, there have been erected 964 houses, or about eight houses to the acre. The tenants are all employees of the colliery company, and number about 6,600, an average of nearly seven per house. The architect is Mr. Percy B. Houghton, of Chesterfield, who gained the first prize in a competition for the design of a cottage, not to cost more than £150. Rough cast has been largely used for the outside finish. Arranged in broad tree-lined avenues and curving crescents, interspersed with wide green spaces, they are attractive in appearance, and in striking contrast to the dull monotony of which

house has been turned into a workmen's club, the members of which number from 600 to 700. The subscription is a shilling a quarter, and the club is managed by a committee composed of six workmen representatives and six representatives of the Company, with their Agent as chairman. Reading-room, library, and billiard-room are provided on the ground floor, with two other rooms for cards or dominoes, and a bar. Good liquor is sold, and all profits are devoted to the interest of the whole village community. Upstairs a room is set apart for the practising of the village band, and some bedrooms, which can be used under certain conditions by members and visitors. In the garden outside are two good bowling greens, and plenty of seats. A well-equipped fire engine is kept on the estate, manned by a capable fire brigade. There is also a handsome church, with sittings for 500, Primitive and Wesleyan chapels, well-built schools for 900 children, playing grounds, football, hockey, and cricket grounds, a bicycle and running track and a pleasing brick pavilion. The cost of the scheme was £208,000, an average of £216 per house;

In South Wales one of the most useful agencies for dealing with the housing of the miners is the Welsh Garden Cities, Limited, of Dumfries Place, Cardiff, under whose auspices the Pengam Housing Society, Ltd., a co-partnership one, has built a garden village of about 300 houses at a cost of £112,000, let at rentals of 6s. 6d., 7s. 6d., 8s., and 8s. 6d. a week. Lower down the Rhymney Valley a similar scheme for 1,000 houses will cost about £250,000. Another, for 264 houses, will cost about £60,000. Another at Giltach Goch, for the South Wales Co-partnership Housing Society, of which Lord Rhondda was the chairman before he went to the Local Government Board, is for 500 houses, mainly for the men employed in the mines of the Cambrian Coal Combine. At the Oakdale Colliery Village, in the Sirhowy Valley, Monmouthshire, is a model village of a thoroughly substantial character throughout, built directly by the Oakdale Navigation Collieries, Ltd., to the design of their very capable architect, Mr. A. F. Webb, M.S.A., High Street, Blackwood, Mon.

Some Scottish and other schemes are illustrated and described, and some very useful points are detailed likely to be useful to architects and builders charged with the design and erection of workmen's houses, and a concluding summary shows what the various agencies have done within recent years for the miners, in most cases so well that one can only wonder that the Government, instead of saddling the ratepayers with the enormous cost thereof, and the tenants of the houses now being built with such heavy rents, did not recognise that the large industrial concerns that attract crowds of workers to centres where housing accommodation was sufficient before, but is now altogether insufficient, ought to have been called upon to build houses for their people as the mineowners did. Such concerns may benefit under the Housing Act, but it will be at the cost of the rest of us, and in some of the inevitable vicissitudes of trade there will sooner or later be left hundreds of houses empty in some districts by the migration of labour, while in others the shortage will be as acute as ever. Gentle compulsion, accompanied by facilities to obtain the necessary capital on moderate terms, would have hurt no large employer of labour. That is sufficiently proved by the success of the comparatively few who have remembered their responsibilities and found their reward in doing so. To all we heartily commend Mr. Butman's book, and trust it may inspire voluntary effort to an extent which, if rightly directed, will outstrip all the Government gingering up which is being frantically applied to make good the evil results of its own ill-advised and unjust policy.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A special general meeting of the Royal Institute of British Architects was held on Monday for the purpose of obtaining the sanction of the general body of members to proposals made by the Council for the unification and registration of the profession. Mr. John W. Simpson (President) was in the chair, and, before formally opening the proceedings, explained that there was no definite scheme or policy before the meeting, the object of the resolutions being merely to provide the machinery for preparing such a scheme.

The Hon. Secretary (Mr. MacAlister) read the notice convening the meeting.

Mr. Sydney Perks asked whether the resolutions to be moved meant that amalgamation with any society was approved?

The Chairman replied that the answer to this would appear from his speech. He then moved the following resolution:—

That this general meeting of the Royal Institute of British Architects approves of the Council's proposal to prepare and present for the consideration of the profession a more extended and comprehensive scheme than that covered by the resolutions of 1914.

He said the business before them was important rather on account of what it implied than because of what they were actually doing. The laying of the foundation-stone did not advance a building very far, but it signified that the underground work had been prepared and the superstructure begun. The basis of the present enterprise had been laid in 1914 under the presidency of Sir Reginald Blomfield, when certain modifications of the Charter had been approved in principle. He (the speaker) hoped to lay the foundation-stone of a great construction, the unification of the profession—(hear, hear)—and would be thankful if that structure could be erected during the term of his presidency. He believed he could render no greater service to those who had placed him in the chair. The war had taught us many lessons, none greater than the value of unity when under single control. So long as architects spoke with different and sometimes inevitably dissentient

voices their great profession would not obtain the influence in public affairs to which it was entitled. On June 29, 1914, it had been decided by the general body to proceed with a registration scheme, of which the principles were scheduled under thirteen clauses. This decision had involved the preparation of a new Charter, and a resolution had been passed on the same day that the solicitors to the Institute be instructed to prepare the necessary petition for submission to the Privy Council. But the war had broken out very shortly afterwards, and these instructions had perforce remained in abeyance. As soon as the new Council was elected it set up a committee to consult with the solicitors and prepare instructions for a new Charter, and it determined to make another effort to unify the profession. It had passed a resolution to that effect, and the reason that months had passed since without definite action was because of his own unfortunate illness at the outset of the session. The Charter Committee had gone on with its work; but it had become more and more apparent that circumstances had changed since 1914, and that the general body ought to be consulted as to whether a more extended and comprehensive scheme could not be prepared. It was somewhat obvious that to deal only with the Charter might not be consistent with the Council's intention to unify the profession. On the contrary, a cut-and-dried proposal which fell short of satisfying the universal desire for internal accord might provoke serious opposition and ever widen the division between architects inside the Institute and those outside. The purpose of the resolution he was now moving was merely to clear the ground for further action.

Mr. Horace Cubitt seconded the resolution. Speaking as an Associate, he said that some of them in times past had felt they were not sufficiently consulted in regard to changes in the affairs of the Institute which vitally affected them. But the calling of this meeting, and the way this question had been brought forward, would make it clear to Associates that they were receiving every possible consideration. The Institute had two alternative policies—exclusion or inclusion. At one time it had adopted a policy of exclusion, and had restricted its membership to a rather limited number of people, who were either Fellows or Associates through examination; but about ten years ago it decided to adopt a Licentiate Class, and by that step it changed its policy from exclusion to inclusion. The present proposal was a further step in the same direction. Looking back, it might perhaps be that there had been some loss to individual members of the Institute as the result of the formation of the Licentiate class; but there could be no doubt that the profession as a whole had gained most considerably. Among the Licentiates were many men who were a credit to the Institute. A matter where the presence of Licentiates had been of great value was in negotiations with the Government on the question of housing schemes. If the Government had been able to tell the Institute that it only spoke for 3,000 architects—practically a minority of the profession—such satisfactory arrangements could not have been made. (Applause.)

Mr. Welch thought that after the word "scheme" the resolution should contain the words "for the unification and registration of the profession."

The Chairman said he thought these words unnecessary, because the meeting was called for the express purpose of effecting unification. The object of the resolution was to clear the ground, so the less put upon the ground the better.

Mr. Sydney Perks seconded the amendment, saying that he believed in resolutions being as definite as possible. Reverting to the question he had asked earlier, he said he took it that the Institute stood pledged to amalgamate with any society?

The Chairman: I have said that before.

Mr. Fraser asked to have the resolutions passed in 1914 read to the meeting.

The Chairman replied that what was being done to-night was neither for nor against those resolutions. The resolution before this

meeting asked sanction for the preparation of a scheme which should go not merely to the alteration of the Charter but should bring about the unification of the profession.

Mr. Welch's amendment was then put to the meeting and carried.

A Member repeated the request of Mr. Fraser that the resolutions before the meeting in 1914 should be read, and this was done by the hon. secretary. After a little further discussion the amended resolution was put and carried unanimously.

The Chairman then moved:—

That this general meeting of the Royal Institute of British Architects approves of the Council's proposal to appoint a committee representative of the whole profession to prepare such a scheme as is indicated in the report of the Charter Committee, dated February 20, 1920.

He said that in 1911 a scheme had been prepared for the amalgamation of the Society of Architects with the Royal Institute. This had failed, and failed because of the very obstacle which the present resolution was designed to avoid. A cut-and-dried scheme had been brought forward involving some sacrifice, without first making sure that it was acceptable to those chiefly concerned in its effects. (Hear, hear.) Instead, therefore, of bringing up a scheme of which the substance was previously unknown, it was now intended that representatives of all the interests in the profession should have a share in framing the new scheme. All concerned were at one in seeking the advancement of civil architecture, as the Charter called it, and the improvement of the position of the practising architect; but they had not all the same views as to the best methods of obtaining those objects. There were various interests to consider, some local, some particular; but he was sure that none were selfish, and none were unwilling to give and take with a view to securing the end desired by all. They should therefore take into their counsels from the start all who were interested, not try to get those who had had no part in the preparation of a scheme to accept a preconceived and very possibly unpalatable idea. (Hear, hear.) The members of such a committee as was proposed would keep their councils, in the case of societies—or their constituents where they were not members of organised bodies—in touch with matters as these proceeded, so that whatever scheme was formulated it would be agreed to *ab initio* by the whole profession before its promulgation for general acceptance. The present meeting might wonder how representatives were to be obtained from practising architects who did not at present belong to any organised society. It was proposed to invite them to assemble at these galleries and nominate such delegates as they wished. A special meeting would also be held for Licentiates. As for the other bodies named in the Charter Committee's report, they, of course, would take their own measures to appoint delegates. The fixing of the proportionate numbers of the respective representatives would obviously be a rather delicate matter, and had best be left to the Council, which would regard its duty in the matter as judicial, and would arbitrate in the fairest possible way. At the same time the question of numbers was not so important as it might seem, because it was quite clear that no mere majority vote on any scheme would satisfy their object. They must be unanimous or very nearly so. (Applause.) He was proud to belong to the Royal Institute of British Architects—the oldest and most important architectural society in the world. Its critics were for the most part within its own borders, and might, he thought, be sometimes well advised to invert the ancient parable, and beware lest the mote in their own eye blinded them to the beam in that of their neighbour.

Mr. Paul Waterhouse seconded the resolution.

Mr. Corlette called attention to that part of the Charter Committee's proposal by which the committee now to be appointed would contain representatives of allied societies in the United Kingdom. He said he had looked up the calendar, and had found that out of thirty-one allied societies only eleven were in the United Kingdom. If architects

were to aim at unification some means must be devised by which those in the Dominions could be associated intimately with the work of the Institute. One great aim of the profession as unified would be to realise far higher ideals in education, so that they might be representative of the art as practised not only in England but throughout the British Empire.

The Chairman said he was entirely in sympathy with the spirit of the proposal. So far as unification was concerned, the matter was easy, but most of the societies outside the United Kingdom had their own schemes of registration; and he doubted whether it would be possible to devise a scheme of registration for the Dominions.

After some further discussion it was agreed that the allied societies to be represented on the committee should not be only those in the United Kingdom, and the report of the Charter Committee was altered accordingly.

Mr. G. Hubbard asked with regard to the Belfast Society, which was not an allied society.

The Chairman pointed out that provision was made for the representation of architects not belonging to any professional organisation.

Mr. S. H. Seager thanked the meeting for agreeing to the representation of architects from the Dominions. The resolution was then put and carried, deleting the words "as is indicated in the report of the Charter Committee dated February 20, 1920," so as to admit of the alterations that had been made in that report.

The passing of the resolutions ended the business before the meeting, but this did not at once disperse.

The Chairman congratulated those present on the work they had done, saying he thought that work was more than appeared on paper. He was not at all sure that they had not already unified the profession. (Hear, hear.) By setting up this committee, representative of all the interests in the profession, they had formed a body which later might become a General Council of Architects, a Royal College of Architects, or anything they pleased. It might deal with questions of education, registration, and a crowd of other matters that did not occur to him at the moment.

Mr. W. R. Davidge said they had not only cleared the ground but dug the foundation. He trusted the structure erected would be permanent in character and for ever inspiring to the profession.

Mr. Welch said it was most vitally important that the work done that evening should be followed up carefully and at once by the body set up for the purpose. It should get into touch with all the allied societies concerned, especially those in the provinces, at once. In the past the Institute had taken too little paternal interest in the allied societies. Some members of the committee should go about the country doing propaganda work in every centre where an allied society existed. Anything like a cut-and-dried scheme worked out behind closed doors would be fated from the commencement. A Charter should be worked out which would remove any disability that any section of the Institute was now under. He was referring to the unfortunate by-laws which left a big section of the Institute without a vote. As citizens they would not tolerate that kind of thing in these democratic days, and they should not permit it to continue in the profession.

The Chairman said the Council was well aware of the advisability of proceeding as soon as possible. If the new committee and the profession as a whole decided to promulgate a Registration Bill they would do so under such circumstances as had never before presented themselves, because they had good reason to believe that surveyors and engineers would join with architects, and all three professions acting together had a very good chance of getting what they wanted.

The meeting then broke up, the discussion being continued in an informal manner.

THE ARCHITECTURAL ASSOCIATION DINNER.

Last Friday night the first annual dinner of the Architectural Association during the past six years was held at the new premises of the Association, 34-35, Bedford Square, and for the first time ladies were present as members and guests.

Mr. Maurice E. Webb, D.S.O., M.C., M.A., F.R.I.B.A., the President, who was in the chair, gave an interesting résumé of the recent satisfactory progress of the Association, and especially of the Architectural School. They had now 200 students, and although a perhaps more than ordinary increase had occurred during the past year by reason of the return of some of the students who had been demobilised he had every confidence that the number would not fall next year. They were starting branches in the provinces, where no facilities for architectural education existed. One at Bristol was doing well, and others were in course of formation. Such schools, of course, would not be started in places where Universities or other adequate sources of education existed, but in the great majority of places the opportunities of the student of architecture were miserably insufficient and often totally absent. What, above all, was wanted was a final School of Architecture. He concluded by proposing the toast of "The Future of Architectural Education," coupling with it the name of the Right Hon. H. A. L. Fisher, M.A., LL.D., F.R.S., the President of the Board of Education.

Mr. Fisher congratulated his hearers on the excellent work the Architectural Association was doing. In this country architectural education was due entirely to private enterprise. Architects had refused so far to invite the frosty finger of the State. He hoped from co-operation between the Association and the Board of Education good results would follow. He himself had always envied the architect, who was a combination of art and science and business aptitude. But even the architect had his moments of embarrassment. There was the client. Dr. Arnold, of Rugby, had complained of indignant parents. Perhaps the architect could tell us something about indignant clients, and that his plans had been perturbed by the client's wife. Aristotle had said that the best judge of a house was the man who lived in it. Perhaps he might have added the man's wife. The requirements of comfort, perhaps, did not always correspond with the requirements of high art. The Association did good work for the country, and for a great and noble profession like architecture, which deserved more adequate recognition. Architects educated the public. As Goethe had said, it was essential to culture that a man should live near a noble building, but many had not the opportunity. In conclusion, Mr. Fisher said that a committee of the Privy Council was at present considering the question of what was called the smoke nuisance, which obscured the sun and polluted the atmosphere, but which, nevertheless, compensated for all that discomfort by providing us occasionally with magic pictures of light and of form, and he had been informed that before very long our cities were to be relieved of that nuisance, and when that was done he hoped that they would have provided an army of architects who would be capable of educating the public in the new conditions.

The toast was also responded to by Sir Reginald Blomfield, R.A., and Mr. John W. Simpson, P.R.I.B.A.

Mr. G. Gilbert Scott, A.R.A., proposed "Other Architectural Schools and Our Guests," which was responded to by the Rev. Canon R. D. Swallow, M.A., of the Education Committee of the London County Council, and Professor A. E. Richardson, of the London University School of Architecture.

The only drawback to a very pleasant evening was the widespread regret evoked by the statement of the Chairman that his father, Sir Aston Webb, R.A., was unable to be present, as it had been announced he would be, by reason of his health.

The death is announced on the 13th inst. of Mr. Henry Blake, principal clerk to the late Commissioners of Sewers for the City of London, who was in receipt of a retiring allowance of £1,000 per annum.

THOUGHTS ON ECONOMICS IN RELATION TO THE PRESENT CRISIS.*

By Sir AMBROSE POYNTER, Bart., F.R.I.B.A., M.S.A.

(Continued from page 212.)

I need not dwell on the greater part of the factors just mentioned; they have been discussed and explained in the papers till we ought to know all that there is to know. I need but remark in passing that Government interference in every business appears warranted to turn a profit into a loss in the shortest possible space of time, and that the existence of a large bureaucracy has not made us fall in love with this system of Government. As regards paper-money, I should like to say a few words of explanation, as the large issue of paper-money has been blamed as a chief contributory cause to the rise in prices and wages also, and to the fall in the purchasing power of money. I think that is not really a correct way of stating the facts, for it is not, it seems to me, necessarily a fact that a large issue of paper-money *per se* brings about an inflation of prices; it is not so much the large issue of paper-money that is to blame, but the conditions under which paper-money is generally issued. A large issue of paper-money is generally made to provide for the needs of war, that is, to pay for munitions and supplies of various kinds. Now I defined wealth as "the added value given to raw material by the combination of brains, capital and labour," but in the case of money spent on warlike supplies no wealth is produced, for the added value given by the brains, capital and labour employed in producing them is at once destroyed, and no added value remains as a stepping-stone to the production of more wealth. The result was and is an enormous quantity of borrowed money issued as notes, guaranteed on the credit of the nation—that is, finally, on the taxpayer's ability to pay taxes, with no increase of wealth, since the material so produced is sooner or later completely destroyed. With all this there are many people with a larger margin for spending, in the shape of profit, than they ever had in their lives before, and many, indeed, found themselves with a spendable margin for the first time—and a diminishing quantity of necessities on which to spend their money. Prices steadily rose; you got less and less for your money; in other words, its purchasing power diminished, while the quantity in existence increased. This is a picture of what invariably happens when paper-money is issued on the credit of a nation to be spent on warlike stores and munitions. But supposing that, instead of borrowing this money for warlike, we had raised the sum for peaceful purposes, a great loan for the object of increasing the general welfare of the country—the national health and prosperity—and that the great sum we have raised for war had been spent on building houses, improving our towns, improving our railways, our canals, our roads, our harbours, our warehouses, in helping industry and agriculture in a dozen different ways, and paper-money issued for the purpose of providing the currency necessary for these operations, the issue of loans would then have been not on wasting assets, but on assets increasing in value, and the notes issued would have had to back them an increased quantity of goods and produce bringing in wealth. In this case the purchasing power of money would not have been diminished. I think I may safely say it would have increased, or remained nearly stationary. My hope is that with the increase of production the time will come before too long, when the number of notes in circulation will not be in excess of the requirements of trade and manufacture, but will balance them—when prices will tend to fall.

Then, again, we have the restriction of international commerce brought about by the irregularity of exchange. This is a complicated subject, and has to do with credits and paper-money. Paper-money for war purposes

* A Paper read at The Society of Architects, March 11, 1920.

† This supposes, of course, that the number of notes now in circulation is not increased.

The Manchester Housing Committee has successfully protested against the Ministry of Health's proposal to introduce a cheaper type of house into the city's housing schemes.

does not, as I have said, produce assets, and is backed by the credit of the nation, the taxpayer, in fact. When the taxpayer is ruined, as he is for the time-being in Germany, the value of the paper-money falls almost to zero outside the country where it is issued, for this reason, that goods have to be purchased outside the country of issue, and to bring these goods there are no other goods offered in exchange, so that money has to be borrowed for the purpose. The borrowing country is in the position of a man who has no income and who does no work, but who borrows money to buy what he needs. His credit is consequently nil, and his paper valueless. In this way the interchange of goods is hampered all round.

I fear that I have already said so much in a general way on the causes of our difficulties that you must feel it is high time I said something as to the way out of them, Sir Charles Ruthen to point the moral by actual examples from his own experience.

I will merely point out that as a result of every error in economics the labourer and workman are the chief sufferers. They are at present, I fear, helping to raise rents against themselves. The chief victim of the scarcity of houses is thus engaged in retarding the arrival of the only remedy, viz., more houses. And I should like to say to those who believe that high wages and low output afford a short cut to an industrial paradise that the present advantages they enjoy are exceptional, and cannot last for long. Great Britain, thanks to the demand for labour, combined with a world-wide shortage of goods and materials, is in the position of a country with a high protective tariff on imports. The growth of external competition will, slowly but surely, have the effect of bringing down prices. And in the face of these falling high prices high wages can only be kept up by high output. The chief competition we shall have to face is not cheap Continental labour flooding the market with cheap goods. The man you will have to reckon with is the American workman, whose output is two and three times that of the British workman, and whose labour cannot be called cheap as far as wages are concerned.

I have said a great deal about mistakes and shortcomings. What is the remedy? The remedy, I venture to say, is to be found in economic honesty, in not trying to flatter people when you are certain that what they are doing is against their own and so against the national interest, but in trying to make clear to them the truth of certain facts. The only answer to statements of opinion is the economic answer clearly and reasonably put, and that part of the economic answer that should be dwelt on consists in such axioms as I have laid down this evening, which I believed to be facts that cannot be changed, whatever our opinion may be as to their pleasantness or unpleasantness, whether we are Free Traders or Protectionists, individualists or syndicalists. The combination of high wages and low output with the object of increasing employment—an object which seems to me to involve a self-evident contradiction, though clearly it is not self-evident to many people—is not a profitable expedient, and will not reach the goal aimed at, which is of course steady employment at good wages for as large a number of people as possible. The Trades Union policy of a minimum output with a maximum wage is bad for the men who take part in it, and is bad for the individual, and consequently bad for the nation as a whole. The skilled workman is discouraged comparatively early in his career; he soon reaches the highest wages he can hope to attain to, and extra exertion and extra skill profit him nothing. The less skilled and less conscientious man is his equal. The policy of Unions as to piecework differs; the engineering and building trades discourage a method of working which is an incentive to effort, but which other Unions manage to admit. In these matters the masters must take their share of blame for a short-sightedness (equal to that of the men in other ways) which, finding that under piecework a workman's earnings increase greatly, cut his wages by putting him into a lower category for pay, under the pretext that he is "earning too much," which a

man cannot do, if he earns it. And those contractors, too, are much to blame (we heard of them during the war, and they are not yet extinct), who, when carrying out "costs plus percentage" contracts, crowd into a job more men than it can carry, and are quite willing to see those men doing nothing half the day, so long as they can pocket their percentage on the wages paid them. Few men who have earned money in this way and who have had such a lesson in dishonesty are likely to become willing workers when conditions change.

Nor is the organisation of every business invariably so excellent as to tend to produce the greatest output for that business. I think the remedy will be found on lines that are already being worked on with success, and which, I admit, must be slow of general adoption, as they must, to begin with, be put into operation by men of exceptional personality. These are open discussions between all concerned with the utmost publicity for such discussions, leading to a place for the workman's representatives on questions of management. Indeed, I understand from recent utterances of some of the employers that this is what they are really yearning for, and that they welcome the idea with open arms. In this case I can only say I am sorry they did not discover this idea and act upon it fifteen or twenty years sooner, for we should by now be getting the benefit of it. Much ill-feeling and misunderstanding might have been avoided had the men been initiated into the mysteries and difficulties of running a large business. Not every business is a paying one. Some do nothing at all for years but pay wages, and, having paid wages, fail in the end, but this aspect of matters is, as a rule, carefully avoided, while the profits are always enlarged upon.

A computation of the amount paid in wages by businesses that have failed would be an interesting study, as would be a demonstration of the small margin which in many businesses divides profit from loss, a margin which may suffice to pay a moderate interest on capital, but which would make a negligible sum if added to the weekly wages. All these things are worthy of study.

Gentlemen, I do really believe that by open discussion and acknowledgment of what management means, and of what has to be done to provide the weekly wages bill, much can be done (and is being done), and that it can be shown that a steady output, not, as I say, a "driven" output, but a normal output, by a man steadily putting forth his powers without strain, is a wholesome as well as a profitable thing for the workman. It creates what I may term a "factory value," which is of benefit to the whole establishment in which the workman is employed, not to the employers alone, but to the employed, as well as to the nation at large. For work brings work, and delay and irregularity in fulfilling orders repel it and discriminate against the factory, or works, or shop where such output prevails. What may be aimed at and should prove acceptable is the scheme of a minimum guaranteed output with a minimum guaranteed production, plus a bonus (calculated on the whole extra output) for extra production equally divided among the men. A fair wage for workmen, a fair price for the consumer, a fair return for capital after labour has had its share, a margin of profit in addition, to provide that increase of capital which is the life-blood of industry and the source of more employment, a share in the management sufficient to let the workmen know where the difficulties of running a business arise. This is a proposal that does not originate with me, but commends itself to me as a fair one. It offers little scope for the extremist and small prospects for the vote-catchers, while it demands of those who try to put it into action to begin with exceptional personal qualities. It is not, therefore, easy of adoption. Yet I believe that a remedy can be found in the way I have indicated, because the people concerned are for the most part Englishmen, and the fair-mindedness and, what is a part of fair-mindedness, the sporting instinct of Englishmen has always by discussion and argument found a remedy for their difficul-

ties in the past, and I am not aware of any changes in the national character to prevent this in the future. And if increased production will not come by agreement, it will come by necessity. Competition will set in again, and we shall have to work harder or go under. Which is less pleasant than doing things by agreement. But I pin my faith to the good sense of my fellow-countrymen in the long run.

DISCUSSION UPON SIR AMBROSE POYNTER'S PAPER.

OPENED BY SIR CHARLES T. RUTHEN, O.B.E., F.R.I.B.A. (SENIOR VICE-PRESIDENT).

Sir Ambrose Poynter has dealt in general terms with the complicated and abstruse subject of Economics relative to and affecting the present national crisis.

As architects, we are naturally more deeply interested in specific application of economics to the building industry than the general application of this involved science to all aspects of the existing national industrial and social crisis. It is, however, obvious that the basic cause of the existing state of affairs is the same, whether consideration be directed to its effect upon the building industry, the coal, steel, shipbuilding, or, indeed, any other great national industry.

I propose to confine myself very shortly to the problem of economics as affecting the building industry, and to what almost appears to be an insolvable tangle in the great and extremely urgent need for the provision of houses for the people.

It is to be sincerely hoped that the Britons of to-day will not follow the example of the Britons of the fifth century, who, according to their old historian, having been relieved of the incessant oppression of ferocious enemies, immediately fell victims to their own vices. Generally speaking, the effects upon national character of war and of long periods of peace have been fairly constant.

During the apparent continual quarrels among the small Greek States, not one of which was larger than a small British county town, there were laid the foundations of practically all that counts in modern art and literature, as well as in some branches of science. The great empire of Alexander eventually intervened and settled these interminable quarrels, but at the same time effectually closed the glorious page of Greek history.

Is it possible that great creative work must have as its accompaniment the horrors of war, and that such creative genius must wither and decay during periods of peace?

The great change that has come over this country—and everyone will, I think, admit that a great change has taken place; in fact, a change has taken place over the greater part of the civilised world—appears to indicate that to the average worker the whole scheme of life in pre-war days seemed an aimless chaos, and that the war provided the first opportunity for real self-expression.

There would appear to be no hope of harmony between Capital and Labour until both are persuaded to approach their problems from an entirely new point of view.

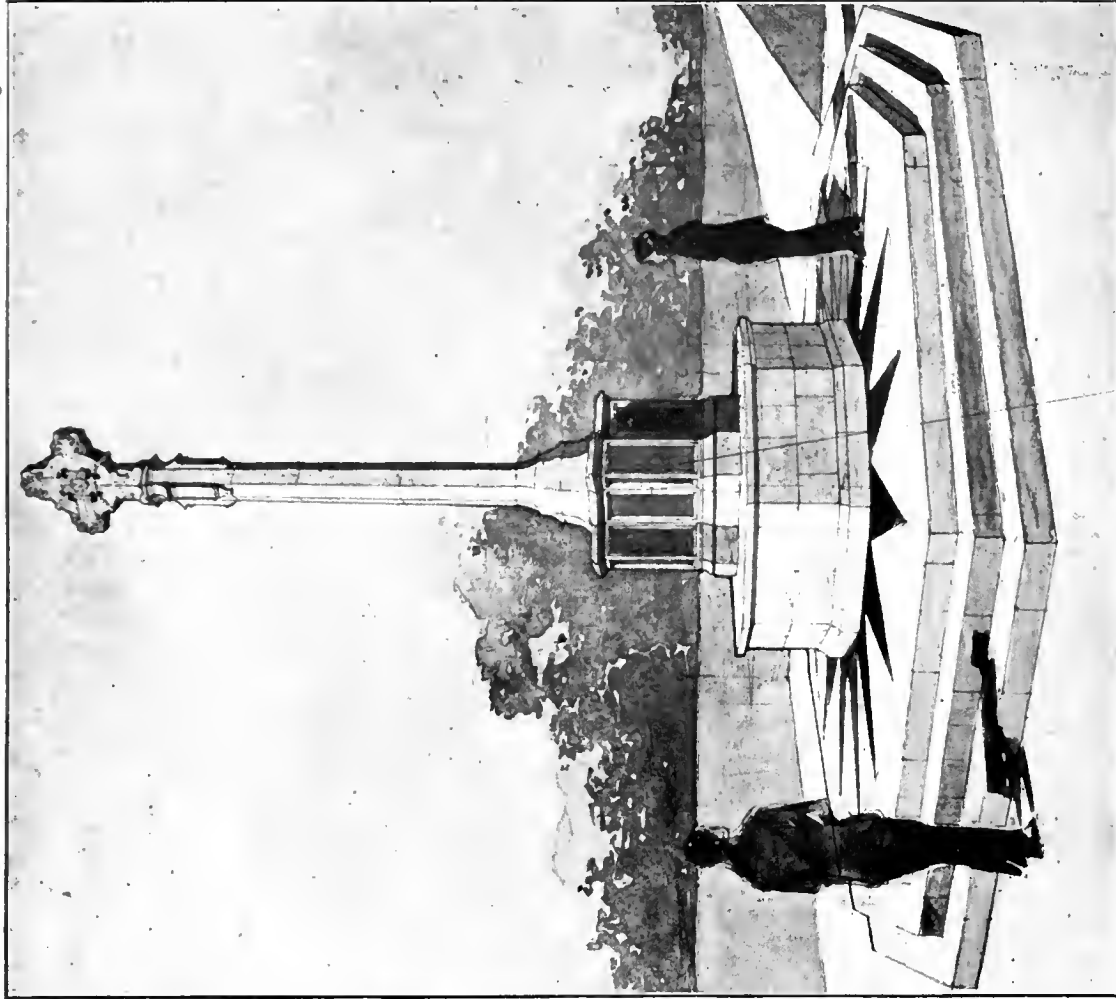
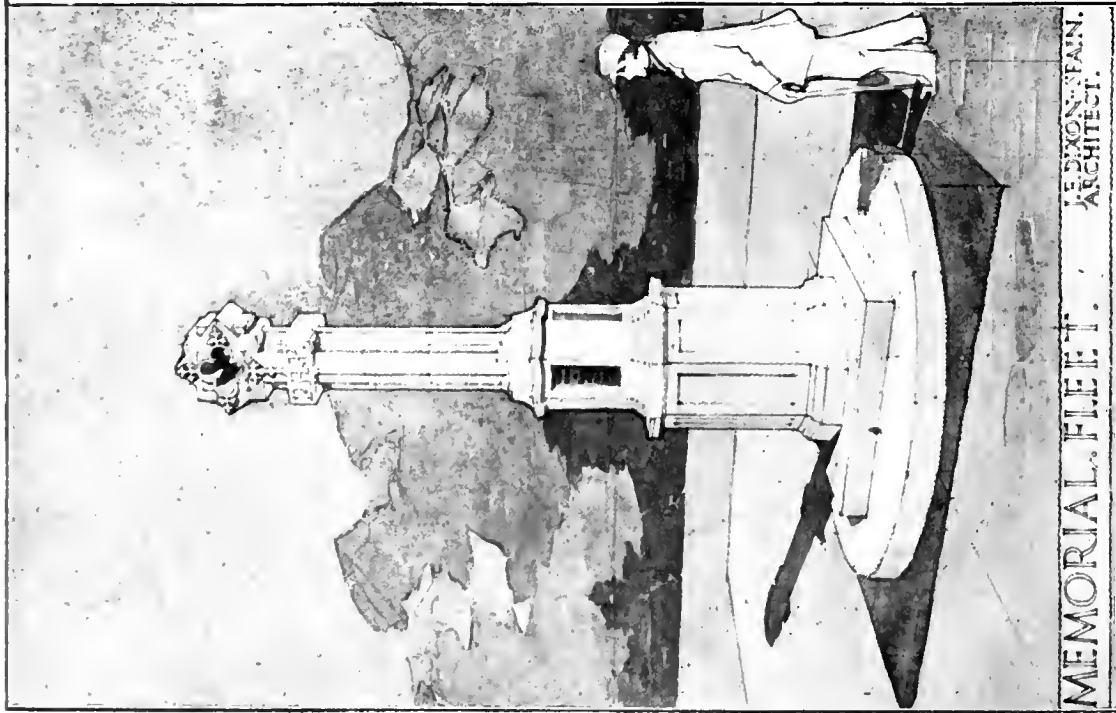
(To be continued.)

COMPETITIONS.

LOCKERBIE WAR MEMORIAL AND 'BATLEY (YORKS) HOUSING LAY-OUT COMPETITIONS.—Members of the Society of Architects are requested not to take any part in the above-named competitions without first ascertaining from the society that the conditions have been approved by the Council.

CHICHESTER WAR MEMORIAL COMPETITION.—Members of the Society of Architects are requested not to take any part in the above-named competition without first ascertaining from the Society that the conditions have been approved by the Council.

The quantity of timber purchased by the Government since the Armistice is approximately 597,000 standards, and the stocks in hand are about 315,000 standards.



WAR MEMORIAL CROSSES, LONG SUTTON AND FLEET, LINCOLNSHIRE.
Lieut.-Col. J. E. DIXON-SPAIN, F.R.I.B.A., Architect.



A CHEMIST'S SHOP, LOWER SACKVILLE STREET, DUBLIN.
("Destroyed Area," 1916.)

Mr. W. SEDGWICK KEATINGE, M.R.I.A.I., Architect.



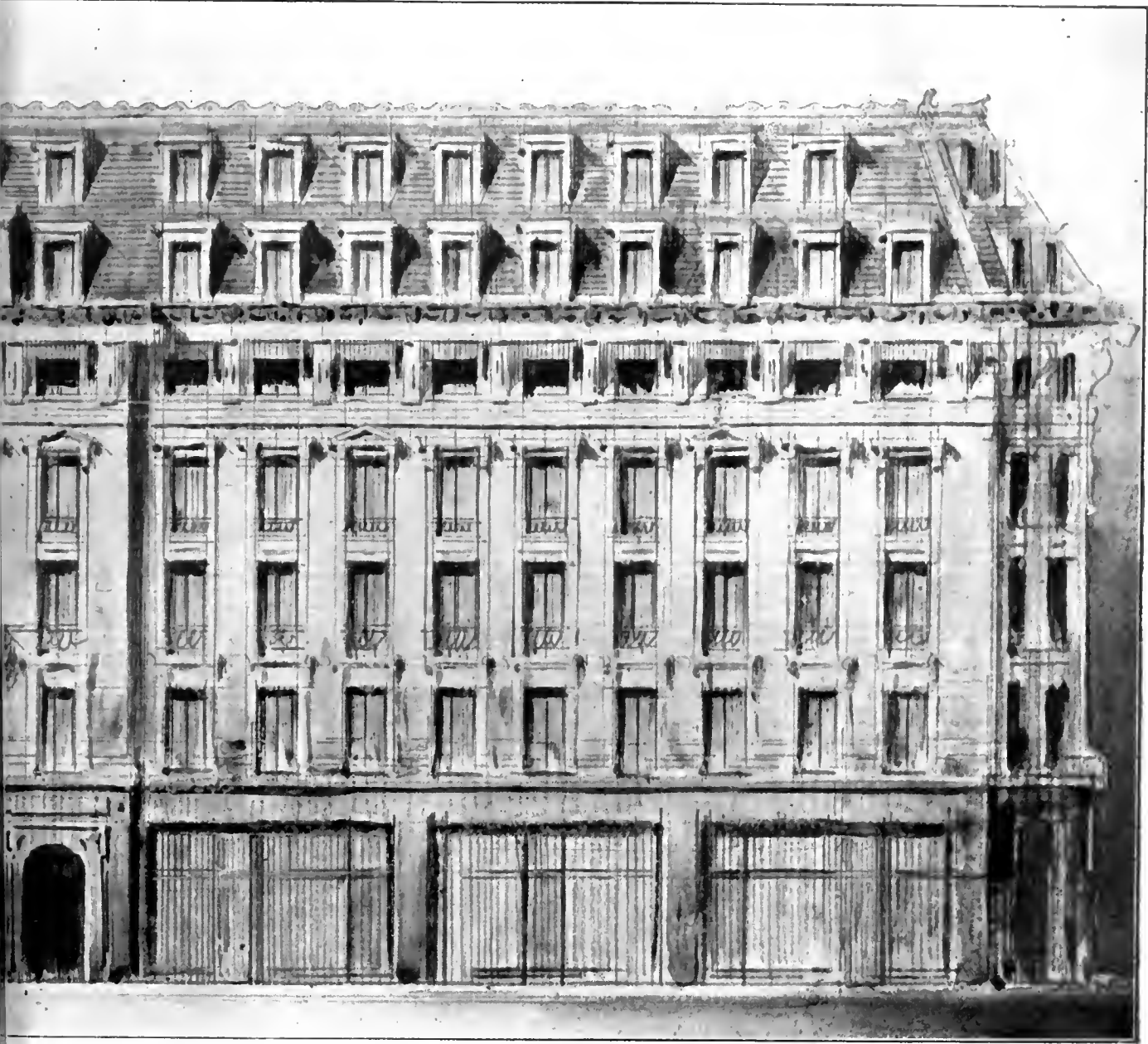
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ELEVATION OF PROPOSED NEW RANGE OF BUILDINGS, INCLUD

MR. FRANK T. V

MARCH 26, 1920.



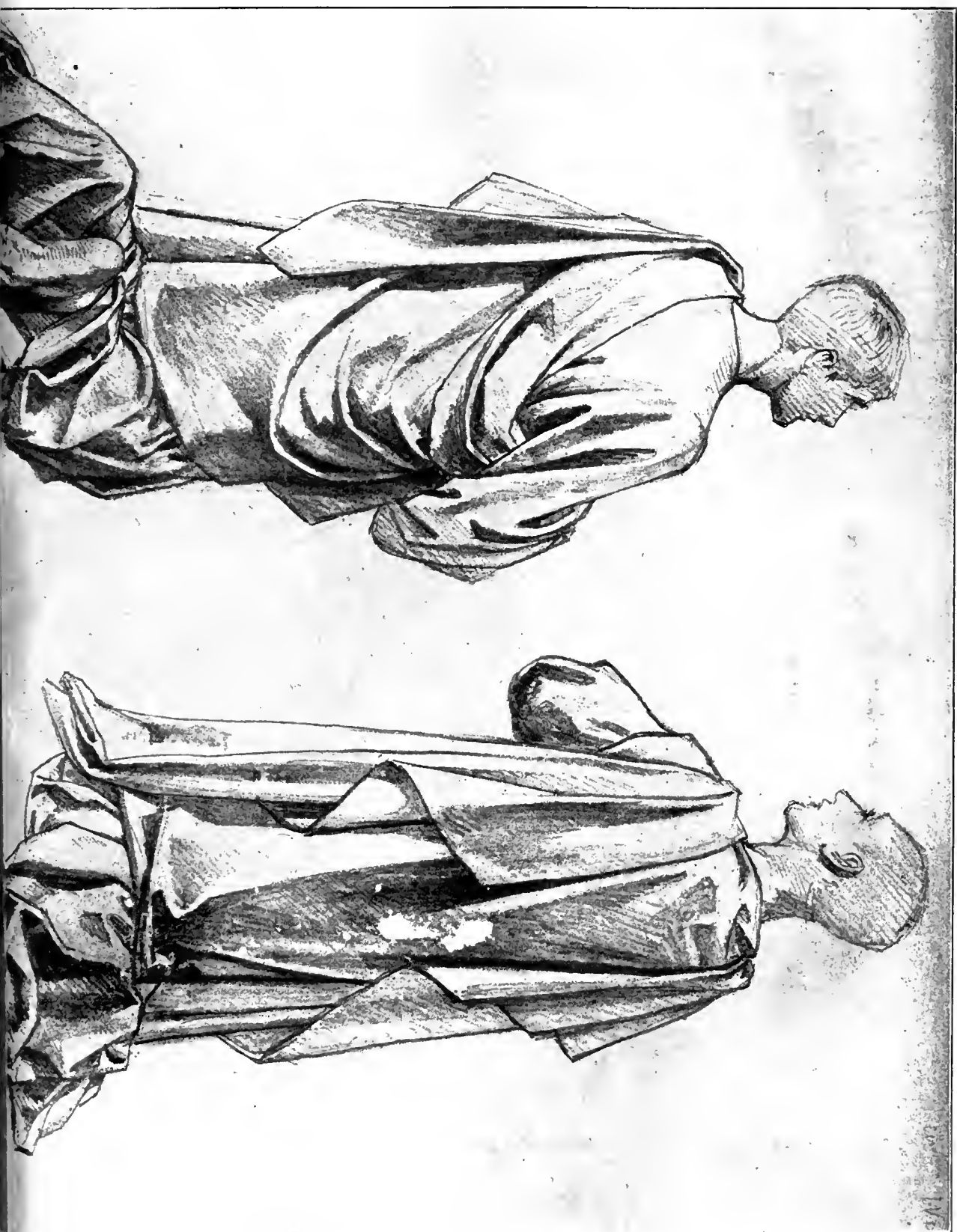
"THE NEW GALLERY KINEMA," 115 TO 131, REGENT STREET, W.
J.R.I.B.A., Architect.

341-4



DRAWINGS OF DRAPED FIGURES, STAINED-GLASS STUDIES (FACSIMILES).
By the late H. W. Lonsdale (1846-1919).

THE BUILDING NEWS, MARCH 26, 1920.





Our Illustrations.

PROPOSED NEW RANGE OF BUILDINGS IN REGENT STREET, W.

This important block, comprising Nos. 115 to 131, Regent Street, north of the Quadrant, on its western side, is designed to include the "New Gallery Kinema," which will occupy the centre of the façade, as shown by the accompanying double page, reproduced from the coloured elevational drawing by Mr. Frank T. Verity, F.R.I.B.A., included in last year's Royal Academy Exhibition. A revision of the late Norman Shaw's scheme, already carried out in so far as the Piccadilly Hotel is concerned, has been made by Sir Aston Webb, P.R.A., and Sir Reginald Blomfield, R.A., co-operating with Mr. Ernest Newton, R.A., has been for some while under consideration by the Department of H.M. Woods and Forests, as well as by the Council for Westminster, but whether the modifications thus proposed have been actually adopted seems so far uncertain, though probably the remainder of the lower part of Regent Street will be built in accordance with the suggestions referred to. The scheme to-day illustrated deals with another section of this thoroughfare, divided by Vigo Street from the southern end, but generally the relative heights and skyline will, we understand, harmonise, as they should do throughout, although the architectural treatment evidently differs very much in detail.

DRAWINGS OF DRAPED FIGURES—STAINED GLASS STUDIES.

These facsimiles of the late H. W. Lonsdale's studies of draped seated or kneeling figures require no description. They serve to illustrate the thoroughness of his work, and cannot fail to be suggestive in many ways for several purposes. Other examples of Lonsdale's work will be found in our issues for October 31, November 7, 14, and 21, December 19, 1919, January 2, February 13.

WAR MEMORIAL CROSSES, LONG SUTTON AND FLEET, LINCOLNSHIRE.

The Long Sutton townsmen who fell in the war will be commemorated by this Portland stone cross, with their names inscribed on bronze tablets. The offsets below these tablets are designed to carry flowers and wreaths offered by relatives on the birthdays and other anniversaries of the fallen. The total height of this memorial is about 22 ft. The Fleet cross in memory of the men of Fleet is likewise of the same materials, but the height is 12 ft. 6 ins. The architect for both monuments is Lieut.-Col. J. E. Dixon-Spain, F.R.I.B.A., of Hanover Square, W., and these drawings were shown at the Royal Academy.

A CHEMIST'S SHOP, LOWER SACKVILLE STREET, DUBLIN.

Mr. W. Sedgwick Keatinge, M.R.I.A.I., the architect who won the competition for a Senate House of the National University of Ireland, is building these new premises in Lower Sackville Street, Dublin. The facade stands in what is known as the "destroyed area"—that is, devastated during the Rebellion of 1916. All the buildings have to have their cornices, windows, etc., at the same height, in accordance with the requirements of the Dublin Corporation: the materials also have to agree. This building is for a firm of chemists, who required

a large amount of light to the first-floor room. It is being built of Co. Dublin granite, red brick, and woodwork of teak.

DOMESTIC ARCHITECTURE IN AUSTRALIA.*

This attractive collection of the best of the good examples of domestic architecture is a special number of "Art in Australia," and embraces forty-seven plates most creditably reproduced from excellent photographs, some of which must have been taken under circumstances of difficulty, which have been skillfully grappled with. We should like often to get such photographs here.

Twenty-four plates are devoted to Sydney; twelve to Melbourne; nine to South Australia, and two to Brisbane, Q. In the selection the publishers had the advantage of the co-operation of Mr. W. Hardy Wilson, of Sydney, who supervised the work generally; Mr. W. H. Bagot, A.R.I.B.A., F.J.A.I.A., of Adelaide, made the selection for South Australia, and Mr. E. A. Brooks that for Brisbane.

The residences chosen are of many styles and periods. Among them Burdekin House, Sydney, which is given as the frontispiece, is the earliest, and is the work of Francis Greenway, the architect for Governor Lachlan Macquarie, whose term of office extended from 1810 to 1821. "Rockwall" is given as a specimen of the New Greek style; "Green-oak's Cottage" as an example of the Gothic revival, while others are adaptations of the Italian and Californian Mission styles.

Mr. R. S. Dods, Professor Leslie Wilkinson, Mr. H. Desbrowe-Anneer, and Mr. Bagot contribute some readable papers expository of the principles of domestic architecture in relation to the special conditions of Australia.

TREATING CONCRETE SURFACES.

The exterior of concrete work moulded in timber shuttering is commonly unpleasing in appearance, its dull flat surface being relieved only by form markings which are themselves objectionable.

Early attempts at treatment—apart from panelling, which gives some relief—consisted in "rendering" the surfaces with a thin coat of cement mortar, which is, however, liable to scale off later. By placing the mortar face at the same time as the concrete backing, a removable metal plate first separating the two, some improvement was effected. Variety in surface appearance was also achieved by the use of different kinds and colours of coarse aggregate on the surface mixture, these being fully exposed to view by scrubbing the green work with stiff brushes and water. Dilute hydrochloric or sulphuric acid may then be used to bring out the colour and texture satisfactorily. Bush-hammering, crandalling, and sand-blasting have also been practised. The textures resulting vary considerably and may be used with effect. Surfaces may also be finished by rubbing with carborundum or cement bricks. The result is a fine smooth finish of greyish white colour. Tile laid in the concrete surface has been tried with some success. Forms have also been used having horizontal triangular grooves to give surface relief. This is said to be effective for such structures as large railroad bridges. (The above is quoted by the *Technical Review* from a statement by Albert M. Wolf, *Engineering World*, January 15, 1920.)

Messrs. Kelly's Directories, Limited, have acquired the premises in the Strand in which Messrs. W. H. Smith and Son have carried on their business for so long a period. The latter are about to enter the premises they built for themselves in 1914, which have since been used for the Postal Censorship offices. Messrs. Kelly's freehold Holborn premises are for sale, with over 40,000 ft. of floor space. The land on which the building now stands was purchased by Mr. Quintin Hogg, with the intention of putting up an institute, but before the plans were sufficiently developed he purchased the Polytechnic.

* "Domestic Architecture in Australia." (London: Humphrey Milford, Oxford University Press, Amen Corner, E.C. 21s.)

Building Intelligence.

RENFREW.—The first houses in Scotland to be completed under the State-aided scheme were opened at Renfrew last Saturday. Renfrew had a pre-war building scheme under which eighty houses of two and three apartments were to be built on the lands of Porterfield. After the Armistice the local authority decided to scrap the pre-war scheme and build a garden suburb at Broadloan, on the southern outskirts of the burgh. Under the new scheme a total of 184 houses will be erected, and later about 350. The houses are built of brick, and are of three types. There will be thirty blocks, each containing four houses of three apartments, rented at £22. In the second style there will be fifty-two houses of four apartments, and the rent will be £25 10s. Although the houses are on the flat system, there are only two floors, and each tenant will have a separate entrance. The third series comprises twelve blocks of semi-detached cottages of three apartments at a rental of £25 10s. Each tenant will have a separate drying green and a garden patch bounded by a privet hedge, while the houses will all be railed in. In the semi-detached cottages the ceilings will be 8 ft. high, but in the other blocks a height of 8 ft. 6 in. is given. It is expected that the cost of the scheme will be about £160,000.

GROUTING OPERATIONS.

Grout was used extensively, says the *Technical Review*, in the structures of the Catskill water supply system for filling spaces behind the lining of tunnels, for cutting off the flow of water into shafts and tunnels by grouting the water-bearing fissures, for solidifying the foundations and stopping the flow beneath dams, and for various other purposes.

Experience showed that grouting was very effective for backing up and filling the spaces behind tunnel linings. A mixture consisting of one bag of cement, one bag of sand, and from six to eight gallons of water, was found to be well adapted for this purpose. Air pressures normally employed varied from 30 to 90 lb. per sq. in.; but to complete the filling of the voids between the tunnel lining and the rock, particularly in the high places in the roof adjacent to the vent pipes, air pressures up to 300 lb. per sq. in. and neat cement grout were used.

Good results were obtained in cutting off the leakage of water into the tunnels by grouting the water-bearing seams. Neat cement grout, about 6 gal. of water to 1 bag of cement, was found to be effective. In respect to this work, the authors deduce the following conclusions as a result of their experience: It is essential that the inflowing water be controlled by collecting it behind drip pans or a steel shell, draining it by pipes, through which the grout can be subsequently forced into the seams. For fine openings a very thin mix must be used. An air pressure should be used sufficient to overcome the ground water head and force the grout into the rock.

Grouting was also successfully used in cutting off leakage in sinking wet shafts, the best results being obtained by alternately drilling and grouting, using holes about 10 to 15 ft. deep in the bottom of the shaft.

The results obtained in treating the foundations of dams and in cutting off leakage underneath the dikes by drilling holes and grouting the seams under the rock structures were satisfactory. It was found to be desirable in such cases to explore the rock under the dams thoroughly by diamond drill borings for the purpose of locating weak zones and open seams.

The Melbourne Trades Hall Council has endorsed the motion of the builders' labourers to the effect that the Council shall take no share in the reception of the Prince of Wales on the ground that the proposed expenditure is being made in order to bolster up capitalism. The Council has passed a resolution requesting unionists not to allow their children to participate in the welcome and other functions.

Our Office Table.

At a general assembly of the Royal Academy on March 18 Sir Edwin Lutyens, architect, and Mr. H. Hughes Stanton, painter, were elected Royal Academicians. Sir Edwin L. Lutyens, son of Charles Lutyens, a well-known artist, was born in London on March 29, 1869. His best work has been shown at the Royal Academy. About his model for the Cenotaph there is difference of opinion, but little about his model for the Great War Stone, which is to be erected by the Imperial War Graves Commission in British and Dominion war cemeteries. He was elected A.R.A. in 1913. Mr. Hughes-Stanton, son of William Hughes (also a painter), was born in 1870. Medals and other favours have come to him. He was made an Associate in 1913. He is represented in Paris Luxembourg, the Chantrey Bequest at Millbank, and in many galleries in various countries.

The trustees of the Sir John Soane Museum have just published a new edition, the tenth, of the official handbook of the Museum in Lincoln's Inn Fields. Edited by the present curator, Mr. Arthur F. Bolton, F.S.A., F.R.I.B.A., this "Description of the House and Museum, the residence of Sir John Soane, R.A." is a revision to the text of the quarto written by Sir John in 1835, but not published, only 150 copies being printed, and mainly distributed amongst his own friends. All that was valuable in additions made to the first handbook of 1840 by former curators has been retained, and several new features have been added to this 1920 edition, but the price of the Handbook is only the shilling for which the original book of 1840 was sold. As the remaining feature of Sir John Soane's quarto, the descriptive notes by a lady (Mrs. Barbara Holland) has already been separately edited by the curator, and is sold as a "Popular Description" at 6d., the visitor and student can obtain for 1s. 6d. practically the whole of the original quarto.

M. Jean Capart, Curator of the Musées Royaux du Cinquantenaire at Brussels and a member of the Royal Academy of Belgium, gave a lecture on "The Study of Egyptian Art" at Burlington House last Friday evening, on behalf of the Egypt Exploration Society. He said that the earliest excavators were most unsystematic and unscientific in their methods and did not publish adequate records of their finds. The study of the subject was also made difficult by the fact that the names of the artists were unknown, and the quality of statues of the same date, and even from the same tomb, varied considerably. The question of portraiture was complicated by the well-known practice of erasing names from statues and inserting in their place names belonging to later periods, so that the inscriptions carved on monuments could seldom be taken as accurate proof of their date. In spite of all the study which has been devoted to the subject, the absolute beginning of Egyptian art still remained out of reach, and many years of careful scrutiny and research must yet precede the publication of a comprehensive history.

Since the Armistice some of the cement manufacturers have been endeavouring to increase their production to the maximum, but owing, it is alleged, to the shortage of experienced labour, suitable fuel, and materials for repairs, the full output has not yet been attained, while owing to the shortage of means of transport there has been a serious dislocation of the work of distribution. This experience, it is stated in an announcement just issued, has convinced the boards of the Associated Portland Cement Manufacturers, Ltd., the British Portland Cement Manufacturers, Ltd., Martin Earle and Co., Ltd., and the Wouldham Cement Co., Ltd., that increased efficiency in the distribution of the cement manufactured by them would be effected by the consolidation of their selling and distributing organisations. To effect this consolidation the Cement Marketing Co., Ltd., has been formed, which company will, on and after April 1, solely undertake the selling and distribution of the cement, lime, and other goods manufactured and produced

by the above companies. It is stated that this rearrangement of selling methods is entirely a matter of internal organisation, and has no bearing whatever on the question of prices. The directorate and staff of the Cement Marketing Co., Ltd., will consist of those hitherto handling the output of the companies concerned.

Dr. Addison wants yet another Committee. He attended a conference of representatives of unions in the building trade at the House of Commons on Wednesday to discuss possibilities of accelerating housing construction. He said a flood of tenders for approved houses was now pouring into the Department. On January 1, 17,677 tenders had been approved; on February 1, 25,960; on March 1, 59,680; and on March 20, 85,265. There was no doubt that by the end of the present month 100,000 would have been approved, and that by the end of June the figure would have risen to 200,000. He wanted to see those houses built by next spring, and would not listen to anyone who said it was impossible. For these houses to be built 48,600 bricklayers would be needed. Before the war there were 100,000 bricklayers; at present there were only 50,993. A fortnight ago returns relating to only 13,205 houses showed a shortage of 3,356 bricklayers. Negotiations with the unions with regard to the shortage of labour had been going on since last June. He had waited with great patience for any definite proposals, but had not received any which were at all adequate, and he put before the conference five definite proposals of his own: (1) In no circumstances, in connection with any dispute arising, should there be a stoppage of house building. (2) There should be every week a statement of labour shortages, and the unions should, through the exchanges or in any other way, supply the want. (3) Augmentation of labour.—A scheme whereby ex-Service men who are able and willing can be trained and employed. (4) Output.—Piecework should be generally adopted, subject to whatever safeguards were practicable against cutting rates and unemployment. (5) He would undertake to supply a form of contract, with prices of materials, labour, overhead charges, etc. They would have an agreed scheme for checking the costs on the understanding that whatever speeding-up was possible should be done. The houses should be built as rapidly and as well as possible, and any saving in respect of cost should be divided into three equal parts and paid one-third to the local authorities, one-third to the management, and one-third to the workers. The idea is that a committee should be appointed to consider the suggestions and work out a practical scheme. Dr. Addison promised to put the scheme in writing before the Building Trades Federation.

PARLIAMENTARY NOTES.

CONTROL OF BUILDING MATERIALS.—On Monday, in the House of Commons, Sir Robert Thomas (C.L., Wrexham) asked the Prime Minister whether he was prepared, having regard to the increasing price of building materials, to regard the building of workmen's dwellings as a war measure, and effectively to control the price of materials and their distribution, and whether he was aware that building contractors were afraid of entering into contracts owing to the prices continually coarsing, with the result that building schemes, in some instances, had been indefinitely postponed.—Dr. Addison replied that, as regarded the first part of the question, the matter was being inquired into by a committee appointed under the Profiteering Act. As regarded the latter part of the question, a form of contract being entered into by local authorities provided for adjustments as to the rise or fall in the cost of materials. He was not aware of building schemes being indefinitely postponed on account of the rising prices of materials.

Croydon's war memorial is to take the form of a cenotaph, and will cost £5,000. In addition the Mayor (Mr. Heath Clark), who has subscribed £1,000, hopes to raise £50,000 for the benefit of war widows and orphans and disabled men.

PROFESSIONAL AND TRADE SOCIETIES.

LIVERPOOL ARCHITECTURAL SOCIETY.—"I do not believe there is any profession in this country among the members of whom there is so little jealousy as in the architectural profession. I am sure any architect is pleased when he learns that a competent brother architect has received a good commission to carry out. There can be no difficulty in bringing architects together if only we get to know one another. Yesterday we laid, so to speak, the foundation-stone of a superstructure which is to embody representatives of the architects of the United Kingdom and the British possessions overseas." With these words Mr. John W. Simpson, President of the Royal Institute of British Architects, acknowledged last Tuesday evening the enthusiastic welcome which greeted his introduction by the President of the Liverpool Architectural Society (Mr. T. Taliesen Rees) to the members at a dinner given in Mr. Simpson's honour at the Liverpool Reform Club. The gathering, Mr. Rees explained, had been hastily convened to celebrate, at the earliest possible moment, the unanimous adoption in London, on the previous night, of resolutions for the unification and registration of all British Architectural Associations and of architects outside the associations, the latter having been invited to elect representatives on a central committee, which will apply for the granting of a charter. The London meeting, said Mr. Simpson, was epoch-making, and would be historical. The unanimity, which was wonderful and without precedent, augured not only the advance of civil architecture and the improvement of the position of the practical architect, but also the securing of that influence in public affairs which their great profession ought to have and was determined to gain. Proceeding to reply to questions, he pointed out that some patience must be exercised during the formation of a committee representative of architects throughout the British Empire, and the committee could not be expected to report until it had been constituted and met in conference. The time was opportune for the forward steps proposed. In carrying out some building and to counteract a combination of contractors, he commended the system, which he had worked repeatedly with success, of the architect buying the materials and employing labour. The architect would not become a contractor, but would charge the cost to the client. It was not the architect, but the master builders who stood in the way of an agreement, the builders seeking to discard control by the architects.

OBITUARY.

The death is announced on February 22 of Mr. Manfred Powis-Bale, an old contributor to this journal. Born in 1850 at Orleton Court, near Ludlow, Shropshire, after receiving his early education at King's College School, London, he entered, as apprentice, the Victoria Works in Lambeth of Powis, James and Co., manufacturers of woodworking machinery, in 1868, and rose in seven years to the post of works manager. In 1875 he left to commence business on his own account in Budge Row, and later removed to Appold Street, Finsbury. In 1909 he began to practise as a consultant in connection with sawmills and sawmill machinery. Among his best known works are his "Handbook for Steam Users"; "Gas and Oil Engine Management"; "Stonework Machinery"; "Pumps and Pumping"; "Modern Shafting and Gearing"; and "How to Manage a Steam Engine."

BOOKS RECEIVED.

Specifications: 1920 Edition. For Architects, Engineers, Surveyors, etc. 5s. 9d. post free.

Concise Costing for Housing. By T. Sumner Smith. M.Q.S.A., F.I.A.R. 5s. 6d. post free.

An effort to improve housing conditions on the working-class estate in the neighbourhood of Regent's Park is being made by the Department of Woods and Forests as the property reverts to the Crown.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House.

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OUR ILLUSTRATIONS.

The Egyptian Expeditionary Force Memorial at

Jerusalem. Plan, elevation, and section. Mr. W. J. Palmer-Jones, architect.

Interior of a Country House Hall, from the Royal Academy, by Mr. Jesse D. Cast.

War Memorial, Radley College Chapel, Abingdon. Sir T. G. Jackson, Bart., R.A., architect; Sir George Frampton, R.A., sculptor.

Currente Calamo.

Mr. Delissa Joseph's paper at the R.I.B.A. on Monday night our report of which we are obliged to postpone till next week owing to the necessity for going to press earlier with this issue in order to secure publication before Good Friday, was, in our opinion, a complete demonstration of the need for a modification of the London Building Act so as to permit buildings up to 200 feet in height opposite parks, public gardens, open spaces and the river-side, and buildings equal in height to the width of a street when that street is over 80 feet in width, provided that the rear angle is within $63\frac{1}{2}$ of 16 feet above pavement level; that the structures are fire-resisting and fitted with staircases affording alternative means of escape, and that the elevations have been approved by the London County Council or the hoped-for Ministry of Fine Arts. The increased accommodation which the gradual development under these proposed relaxations of the Building Act would afford to an inadequately developed London would supply an urgent need, and would afford a new and vast untapped source of assessment which would form the security for large public loans, which could be applied for the widening of congested thoroughfares, the equalisation of rates, and the financing of municipal housing schemes; and that all this could be accomplished without detriment to the beauty of London and without recourse to the "skyscraper," by a couple of short clauses added to the present building Act. We are glad to note that at the next business meeting Mr. Delissa Joseph is moving a resolution to refer the question to the Council with a request for them to take the necessary steps to bring about an alteration of the Building Act. The Council have themselves established a precedent by drafting a Bill to amend the law of light and air because it frustrates the development of London. Let them now draft a Bill to amend the London Building Act, so as to permit, with proper reservations and control, the erection in London of higher buildings.

The Public Works Department of the City of Montreal has done a very sensible thing, which might well be done here by the Ministry of Health if the by-laws of some of our local authorities are to delay

building much longer, capriciously interpreted as they are by some of the engineers and surveyors whose knowledge of architecture and construction is, to say the best, elementary. At Montreal the Builders' Exchange, the Engineering Institute of Canada, and the Association of Architects of the Province of Quebec have been invited each to nominate a member of the Advisory Board constituted under the new code of building by-laws, which has now taken definite shape. The Board will be composed of an experienced builder, engineer, and architect, and the object is to obtain the benefit of their help and advice at the period of organisation, as well as after the code has been put in force. The function of the Board for the present will be to advise the Public Works Department in regard to whatever changes it may be thought advisable to make in the preliminary draft of the code, and also in regard to building restrictions in the various streets and wards of the city, etc. Later, the Board may be called upon to advise on all matters relative to the interpretation of the code, and make recommendations to the city authorities. The Board will meet as often as requested by the Director of Public Works, and the members will be paid a fixed sum per meeting. It is stipulated that members of the Board shall have a wide experience in their professions, and shall take a keen interest in the building trade of the city, and shall thoroughly know the wards of the city.

Architects, engineers, contractors, linen-men, etc., often have to refer to drawings and blueprints in all kinds of weather, and usually find before long their prints are in a very dilapidated condition. A simple way of overcoming this trouble is to render them waterproof by saturating them with paraffin wax. If the prints are placed directly in a pan filled with this molten wax, they will soak up too much of it and will always feel more or less greasy to the touch. The most convenient way, therefore, is to soak a number of pieces of absorbent cotton cloth a foot or more square in the wax. When these pieces of cloth are cool, lay as many as are required (depending on the size of the blueprint) on a table or other smooth surface, place the print on top of these, and then on top of the print lay more of the cloths until it is entirely covered.

After this is done it is only necessary to run a hot iron over them for a few moments. The print will immediately absorb the paraffin until the surfaces become saturated. If the table on which the work is carried out has a highly finished surface, a layer or two of heavy wrapping paper should be placed between the cloths and the table. A good plan is to interpose a piece of wrapping paper between the iron and the cloth also, as it will prevent the iron from being fouled with the wax.

Mr. Cyril F. Johnston, of the famous firm of Messrs. Gillett and Johnston, the Croydon clock makers and bell-founders, gave some very interesting details of the art of which they are the leading practitioners. Mr. Johnston described fully the perfect way of tuning. The bell was formerly treated as possessing only one tone, whereas it has really many, of which at least five are now under control. The lecturer struck two bells in turn—an ordinary bell and a "perfect bell," and observed, referring to the purity of tone, that the tones of Big Ben were enough to drive any good bell-founder into an early grave. Chaldon Church, he mentioned, has the oldest bell in Surrey, supposed to be dated 1250. Besides the revolution in tuning, modern bells are swung on ball bearings and hung in metal frames. These reduce the stress and strain on tower, bells and ringers. Now that bells can be tuned more accurately than any musical instrument, it is hoped that in England there will be a revival of the carillon method. The firm is installing twenty-three bells in the clock tower for carillon playing demonstrations—bells controlled by a machine like a gigantic musical box, to which any tune can be accommodated.

The death is announced of Mr. Chas. Chittick, permanent director and chairman of Matthew T. Shaw and Co., Limited, constructional engineers, of Millwall, E., at Bournemouth, after a short illness.

"I have been locked up seven days and it has learned me a big lesson and made me a Christian man," said Charles Thornton, aged 46, described as a property repairer, of 12, College Street, Rochdale, who stood in the dock at the Rochdale borough police court last week on four charges of stealing a ladder, a tiled ash-guard, a tiled hearth, and a hand-barrow. He was sent to gaol for six weeks with hard labour.

THE INTERNATIONAL BUILDING TRADES' EXHIBITION.

The International Building Trades' Exhibition at Olympia opens on Saturday week, April 10, and remains open up to and including Saturday April 24. It will doubtless be visited by many who for some years past have had no opportunity of the kind to renew their acquaintance with the exhibitors of the materials and appliances which they are called on to specify or to use in construction, and the various adjuncts of building in all branches. We hope the exhibits will be ready on the day of opening, and that due publicity will secure the attendance of really interested buyers, whose presence is preferred by exhibitors naturally to large influxes of miscellaneous sightseers. To secure this, in the mutual interest of exhibitors and their clients, we give a few particulars of the exhibits more especially worth notice.

Messrs. Engert and Rolfe, Ltd., whose name is a household word where external and underlining felts, dampcourses, and all kinds of Rock Mastic and "Lithonite" sheet asphalt work are concerned, show on their stand, 50 Row D, specimens of exceptionally good, self-finished roofing felts for external covering purposes, and we note in particular the excellent quality of their proprietary brands, "Waterp" and "Talconite." That a pure bitumen self-finished roofing can be produced at the low figure at which they are offering "Talconite," will undoubtedly largely increase the sale of this brand, for which Messrs. Engert and Rolfe, Ltd., inform us there is already an extensive and increasing demand. The firm's "Trinda" bitumen roll dampcourse is also a remarkable line. It is of the standard approved by the Ministry of Health for the housing schemes, and will therefore be of special interest at this juncture. "Trinda" is manufactured from genuine refined Trinidad Lake bitumen, and has no superior on the market. Messrs. Engert and Rolfe's connection with asphalt work has now been established many years, and in this connection their name and the superiority of their materials and work are very well known to architects, builders, contractors, and public bodies throughout the United Kingdom. Their two specialities, which are of particular interest in view of the high cost of sheet metal: (a) Their "Limolith" combined system of sheet asphalt with rock mastic asphalt upper layers, which forms a most excellent roofing for boarded flat roofs, dormer tops, etc., while their reinforced system of rock mastic asphalt is equally satisfactory in the place of sheet metal for lining box and valley gutters, dormer checks, tanks, etc.; and, as it is more than ever necessary to exercise economy in building construction it is no wonder that these exhibitors have a large call for these two systems. The employment of either of them in their respective positions is recommended, as apart from the advantage of economy in cost, the stability and efficiency of the work are also unquestionably secured.

Messrs. Kerner-Greenwood and Co., Ltd., King's Lynn, exhibit at Stand No. 45 in Row "C," their well-known cement waterproofer, "Pudlo." The exhibits consist chiefly of apparatus and models which demonstrate the practical application of "Pudlo," and comprise apparatus for testing the resistance of cement permeation by water under pressure, similar to that in use at their works for making the daily tests. A full-size section of a solid concrete floor is shown, with 1-in.

"Pudloed" cement topping. The lower edge of the concrete is immersed in water, and the perfect dryness of the upper surface is proof of the power of a "Pudloed" topping to keep down rising dampness. A short length of stoneware drain-pipe is shown charged with water. The joints are made with three parts of sand and 1 part of Portland cement and "Pudlo." They are cheaper and more efficient than neat cement joints; also a good joint for iron pipes, instead of lead joints. We also call attention to a water tank constructed of thin porous concrete blocks, to which a 3-in. facing of "Pudloed" cement has been applied during the process of manufacture. It would be difficult to devise a more stringent test of the waterproof properties of "Pudloed" cement. There are also shown "Pudloed" concrete tanks, dampcourses, etc., and details of the application of "Pudloed" cement to the cure of flooded cellars and damp walls, etc., etc. This firm is noted for the artistic merit of its advertisements, and it was a happy thought to display some of the artists' original sketches. We noticed advertisements by the following artists:—Chas. Shepperson, R.A., Stephen Reid, R.E., H. M. Brock, R.L., L. R. Squirell, R.E., Oswald Cunningham, James Guthrie, Mrs. Nesbit, as well as some remarkably clear, "Commercial" lettering of the word "Pudlo." This section of their exhibit will attract architects and architectural students who will be interested in the technique of the drawings.

The Ransome-Vermehr Machinery Co., Ltd., of 14-16, Grosvenor Gardens, S.W.1, show at Stand 184, Row K, their Ransome 1920 street concrete mixer, No. 0 size, batch capacity 5/6 cubic feet, with direct coupled petrol engine, elevating hopper and self-propelling road wheels. This machine is fitted with swivelling boom and bottom discharge skip for distributing the mixed concrete. The firm also show the Ransome concrete mixer, No. 1 size, approximate batch capacity 1/2 cubic yard, with fixed measuring hopper, regulating water tank and fast and loose pulleys; the Ransome "Urban" tar macadam plant, No. 0 size, approximate batch capacity 5/6 cubic feet, with single drying drum, single axle paddle mixer, elevating hopper mounted on road wheels; the Ransome type "D" steel piling, which, famed for efficiency and great strength, is 25 per cent. to 33 per cent. lighter than competing sections, and therefore, costs much less both to buy and to handle; the Ransome pile helmet (Crawshaw patent) for protecting reinforced concrete pile during driving; the Ransome tip waggon one cubic yard capacity, 24 in. gauge, with roller bearings, which, exceptionally stoutly built, tips in a flash; and the Ransome hand-cart, a simple appliance which is superseding ordinary barrows because although its capacity is three times greater it can be hauled by a boy with greater ease than can a barrow by a man.

Messrs. Perkin and Co., Ltd., the Junction Works, Leeds, are exhibiting saw benches with fixed and rising tables, band saws, vertical spindle moulders, and planing machines, but the novelty on the stand will perhaps be the bench type planer, made in two sizes for widths of 4 in. and 9 in. respectively. The machine is built on modern lines, and is of accurate workmanship, and intended for repetition work or to relieve the larger machines in a workshop by taking care of all the smaller stuff.

At Row D, Stand 58, the Improved Liquid Glues Co., Ltd., Great Hermitage Street and Bushell Street, London, E.1

(Glasgow Depot, 35, Dunbar Street), are exhibiting "Croid" Extra Strength, for end grain work and other special purposes; "Croid" Standard Strength, for joinery, cabinet-making, veneering, lino laying, and all manufacturing and domestic purposes; and "Croid" Aeronautical Standard, for aircraft construction. An ingenious machine is shown for testing the strength of glued joints. The Government tests of all glues are made on a similar machine. Recent tests thus carried out have shown the consistent breaking strain of the "Extra" strength of "Croid" to be 1,350 per sq. in. Demonstrations will be carried out during the exhibition on joints made on wood, leather, and other material. Insol, the waterproof and heat-proof glue cement for plywood, metals, rubber, etc., which possesses the strength of glue and the insolubility of cement, and adheres to aluminium, oily woods, raw hide, etc., is also to be seen.

The "Dry-Walls" exhibit shows the "Dry-Walls" method of construction, which, in order to secure the utmost economy and strength, makes use of poured concrete in the form of a solid wall, having an outer half of ballast concrete and an inner half of clinker concrete (as security against condensation). A central and vertical dampcourse in the form of bitumastic sheeting secures absolute weathertightness. By the use of the special wall tie the strength of a solid wall is obtained without puncturing the central sheeting; a 6-in. wall on this system is stronger and more weather-resisting than an 11-in. cavity brick wall. These facts, combined with the great economy effected in labour and material by the use of the "Dry-Walls" shuttering, should appeal to all builders and contractors either engaged on or contemplating building operations. "Dry-Walls," Limited, will show various sections of walls constructed on their system indicating clearly the practical application of the central vertical dampcourse and the novel method of ensuring a perfect lap to same at all points. The "Dry-Walls" economical shuttering will be available for inspection, and the simplicity of its use will be demonstrated.

Messrs. Vickers, Limited (Building Department), are showing at Stand 71 and 72, Row D, a portable concrete brick machine for hand power, making six bricks at a time, and designed to make concrete building bricks of the standard British or Continental dimension, plain or coloured. Also their concrete partition slab machine for making slabs of varying thicknesses from 2 in. to 4 in. (5.1 to 10.2 c.m.). Hollow or solid slabs for partitions or external walls may be made on these machines with square edges or with grooved and tongue joint. Agricultural pipes can be produced at a very low cost by the use of a special attachment fitted to the partition slab machine, which admits of the production of three or five pipes with butt joints to be manufactured at each operation. The Vickers-Hobbs block machine produces blocks, hollow or solid, on the face down system, which is admitted to be far superior to any other method of manufacture. By their special face plates it is possible to obtain the same natural effect as that produced by dressed stone. Their concrete interlocking roofing tile machine consists of a light portable plant for producing interlocking roofing tiles of any desired colour or surface, and perfectly wind and weather proof. The doors, windows, gates, dressers, etc., shown on the stand are examples of standardised joinery now being produced for supplying the building trade.

Waygood-Otis, Ltd. (established 87 years), lift engineers by appointment to

H.M. the King, show their Waygood-Otis electric passenger lift to convey visitors free of charge to and from the gallery. This lift is arranged for dual control by car switch with attendant in the car, and automatically, without attendant, by push buttons in the car. The change-over switch is fitted to the machine. The car is of up-to-date design constructed in steel and glass. The wrought iron enclosure work illustrates one of the many designs that can be arranged. Two different forms of position indicators are shown. Also their Waygood-Otis electroil lift, consisting of direct acting ram beneath platform, operated by patent oil pump coupled to electric motor and electrically controlled; a model of the Waygood-Otis hand lift operated by endless rope; a model of the Waygood-Otis hand lift operated by hand rope, and controlled by foot brake; and a model of the Waygood-Otis automatic electric passenger lift. Among the smaller items shown there are included rope grip, W.I. top hung gate, sample automatic locks and car switch pushes and bell indicator, etc.

Messrs. F. McNeill and Co., Ltd., the original patentees and manufacturers of asphaltic roofings, and for over 70 years Government contractors for these felts, show rolls of all kinds of felts for exterior roofing, underslating, lining, and sound-deadening purposes, etc., as used during the war for aircraft buildings, hospitals, inspection bonds, factories, huts, etc. Of particular interest is the "Lion" roofing, which is the highest grade of the so-called "rubber type" of roofings in the market manufactured in rolls 24 yards by 1 yard, suitable for use in all climates. Models showing the application of the McNeill's "Combinite" system of roofing, as applied to flat or sloping roofs, demonstrate clearly the advantages of "Combinite" roofing. Other models of Mansard, flat, North Light, and Belfast roofs are shown covered with suitable roofings. Particular interest attaches to the treatment of gutters, valley gutters, and flashings. Of special importance is the model showing the indestructibility of "Slagbestos," i.e., the perfected form of McNeill's patent slagwool. "Slagbestos" is the finest non-conductor extant, and is absolutely fireproof, soundproof, and vermin proof. It has many uses in building construction, shipbuilding, cold storage insulation, boiler, and pipe-covering, and thousands of tons have been used on Britain's biggest battleships and the largest cold stores on land and refrigerator steamers afloat. For use in connection with many of the housing schemes throughout the country, McNeill's dampcourses, owing to their high excellence, are being very widely specified. For lining reservoirs, aqueducts, tunnels, swimming baths, miniature lakes, ponds, etc., McNeill's pure bitumen sheeting is strongly recommended. Special pattern pipe-coverings are shown which are remarkably easy to apply and to remove for repairs. These are highly efficient insulators, and effect very considerable economy in fuel consumption.

The Willesden Paper and Canvas Works, Ltd., at Stand No. 97, Row F, are exhibiting on full-sized sections the application of Willesden paper under slates, Willesden paper on close-boarded roofs as underlining, and Willesden 4-ply paper as direct roofing with battens. Also we have selections of their canvas specialities, flaxes and cottons, but their principal exhibit is, of course, the Willesden 2 and 1-ply paper for underlining and underslating, and Willesden 4-ply for direct roofing. They are also exhibiting their unique speciality of polo goal-posts, for the supply of which

they hold the practical monopoly of the world.

Any reader not yet using them should not miss the exhibit of the Rawl-Plug Co., Limited, of Lenthall Place, Gloucester Road, S.W.7, which embraces their novel and most useful fibre plugs for fixing securely anything that is required to be held by a screw to walls, or to any surfaces of plaster, brick, concrete, cement, marble, slate, stone, metal, etc. Anyone can use them; there is no damage to walls, such as frequently attends the futile attempt to use a wooden plug to receive the screw. They are invisible when in position, and can be fixed in five-sixths of the time it takes by the old process. A trial of the "Household Outfit," at 3s. 6d., will convince every purchaser of their utility, and that anything from a coat-hook to an over-mantel can henceforth be securely attached to a wall, and as readily detached when removal is desired, without an atom of damage and with a pleasurable meritorious abandonment of the use of swear-words that generally accompany the householder's vain attempts to get his wooden peg into crumbling plaster or stubborn brick, or, when once there, to induce the screw to remain in secure cohesion therewith.

The stand of the Brilliant Sign Co., Limited, 38, Gray's Inn Road, W.C., No. 146, Row II, is in a prominent position, having three frontages each 20 ft. They are showing all kinds of signs, including the popular brilliant fascia, also high-grade show-cases and counter-cases, etc., and an outstanding feature of the exhibit will be a model of their freehold works at Shepherd's Bush, being an exact reproduction in every detail. These works are the largest sign-works in the kingdom, covering three acres and employing 500 hands. They are the inventors and patentees of the brilliant letter, protected in all countries. They have branches in Manchester, Leeds, and Antwerp, etc., and are always pleased to show architects, builders, etc., over their works, submit sketches, quote prices, etc., for anything in the sign or letter business.

The Leeds Fire Clay Co., Ltd., are showing at Stand 123, Row G, Burmantoft's terra-cotta—"Marmo," "Lefco," "Greyco," Vitreous, etc., etc. Burmantoft's Faience—for interior and exterior decoration. Burmantoft's fireplaces—for mansion, office, school or cottage. Glazed bricks and tiles—"Impervit" leadless glaze; the largest manufacturers in the world. Patent partition bricks—for closet cubicles, bathrooms, shower bath installations, etc. Specialities for swimming bath construction—scum channel, terra-cotta coping, graduated cove bricks, etc. Cliffs' "Imperial" porcelain baths. Duckworth's patent bath—for housing schemes. Economy of space and efficiency of working. Fireclay sanitary goods—lavatories, urinals, closets, sinks, wash-tubs; "Cliffs" and "Oates and Green" are noted the world over for quality and excellence of design. New patent lavatory tap—working parts concealed, but readily accessible; all exposed parts in porcelain and easily cleaned. Drain pipes and drainage specialities. Johnson's patent grease extractor—a novel and simple method of preventing grease from entering the drains. Its use should be insisted upon by every surveyor. Mangers and stable and farm fittings. Firebricks, furnace blocks, etc. Frittite refractory bonding cement—for repairing, setting, jointing, and pointing all kinds of firebrick work, gas retorts, flue linings, cupolas, kilns, coke ovens, furnaces, etc. Claridge's Patent Asphalte Co. (proprietors, the Leeds Fireclay Co., Ltd.). Asphalte—made from the original formulae,

and is recognised as the highest standard. "Clarmo"—the latest jointless flooring composition; a non-conductor of heat, readily shaped into coves and borders. Easily cleaned and economical.

At Stand 33 the British Reinforced Concrete Engineering Co., Ltd., of 1, Dickinson Street, Manchester, exhibit the various applications of their well-known system, which combines in one material the strongest form of reinforcement and the most convenient form for securing really accurate construction. There is no type of structure in which the system may not be used, ensuring the same good features—ease of fixing, accurate spacing, greatest safety, and real economy. For the heavy loads of workhouses and machinery floors, or for the light loads of dwelling-houses and offices, it is unsurpassed by any. Of its increasingly widespread adoption we have from time to time illustrated and described many examples, and in no case has it failed to secure the gratified approval of those who have used it.

Messrs. John Tann, Ltd., of 117, Newgate Street, E.C., exhibit a selection of their well-known safes—"The World's Best Security," as their many records of successful resistance to fire and burglar fully entitle them to claim as their watchword. Few makers have had such long and wide experience, or are as well qualified to give expert advice as to the selection of safes, and this will readily be tendered to all who visit their stand.

The British Uralite Co. (1908), Ltd., of 8, Old Jewry, E.C., have on view a fine selection of their Asbestos tiles and sheets for roofing and lining, as used by the L.C.C., H.M. Office of Works, the Admiralty, the War Office, the Metropolitan Asylums Board, and the leading architects of the country. Light, and therefore facilitating a far lighter superstructure, thus favouring economy; subject to no loss by breaking, either in transit or fixing; fireproof, vermin-proof, and damp-proof; rapidly fixed to either wood or steel framing; dry when it is put up, so that paper and paint can at once be used, to great saving of time, and favourably contrasting in cost with most other similar materials, its use is deservedly growing in all countries and climates.

The recent success of the Ironite Company, Ltd. (Messrs. S. Thornely, Mott and Vines, Ltd., 11, Old Queen Street, S.W.1) at the Ideal Homes Exhibition will certainly be repeated. In our recent issue of February 27 we illustrated and fully described the merits of their unique system of Aero block construction, and its many advantages over brick or monolithic construction, and drew attention to the merits of "Ironite" as a flooring material, or for waterproofing walls, reservoirs, tanks, etc. These will be found fully represented, and the visitor will do well to avail himself of the courtesy with which the applications of the company's specialities are explained.

Venesta, Ltd. (the General Shipping Co., Ltd., 4, Great Tower Street, E.C.), the great ply-wood specialists, have a room covered with their ply-boards in lieu of lath and plaster, which altogether avoids the damp, always pernicious in newly-built houses, and offers an admirable medium for the effective and permanent decoration of walls and ceilings. Attention is also directed to their fine exhibit of some excellent oak panellings for dining-rooms, halls, libraries, etc., and some very good parquet flooring.

Berger's paints and varnishes, steadily progressing towards the completion of their second century of use, are, as always, illustrated by successfully executed

schemes of colour decoration by the makers themselves. At their stand the artist and the craftsman alike will get free the experience, the fruits of which are so effectively displayed, and so render certain the success of their own application of the firm's various specialities which have found such favour.

The Carron Company, of Carron and Upper Thames Street, whose reputation for solidity of construction has, through its long history, established an unsurpassed guarantee of endurance and suitability, and has been ever increasingly marked by tasteful and refined craftsmanship, show a variety of designs of fire grates and their adjuncts, so extensive as to facilitate their adoption in the houses of any period or style, from the cottage of the peasant to the palace of the prince. If any reader is unable to visit their stand, he will do well to send at once for their No. 81 C "Longden Catalogue," which will be forwarded free on application, and will assuredly be useful, whatever the extent or character of his intended selections may be.

The Kleine Patent Fire-Resisting Flooring Syndicate, Ltd., of 133-136, High Holborn, W.C., exhibit their patent fire-resisting fans, roofs, and staircases, for which absolute resistance to fire, and economy of sound-proof construction, are guaranteed. British throughout, the reputation of the firm will deservedly be enhanced by the examples shown.

The Beaver Board Company, Ltd., of 4, Southampton Row, W.C.1, have done more than most to enable us to get rid of lath and plaster and bad and dear paper-hangings, and give us walls and ceilings that will last as long as the house and never crack or fall, however furiously and fast the motor-bus or the lorries strive to shake down our structures. Beaver Board, as most readers know, is white Canadian spruce shredded and pressed into panels of convenient size, which are nailed to the studs or ceiling joists. The surface is then finished with distemper or paint, and the joints covered by wood strips or mouldings, which give a rich panelled effect. Wherever tried it has stimulated increased demand, but it can now be obtained in unlimited quantities, and no reader should omit to apply at the company's stand for a sample and particulars.

One of the earliest, and still one of the most reliable makers of pure bitumen dampcourse, the famous "Red Hand Brand," Messrs. D. Anderson and Son, Ltd., of the Lagan Felt Works, Belfast, and Roach Road Works, Old Ford, E., still challenge comparison with many more modern substitutes, and with good reason and results. Absolutely to be relied on, any likely user unable to get to Olympia will do well to make early application to either of the firm's addresses for full particulars (marking their letter "Dept. N") to receive early attention.

All in search of seasoned hardwoods—and not a few are with scanty success at the present time—may be reminded that they are the speciality of the old-established and always reliable firm of Messrs. Wm. Oliver and Sons, Ltd., of 120, Bunhill Row, E.C. Theirs is an exhibit which will well repay a careful inspection, so superior and in many instances unique are the specimens shown.

"The Three Good Things" no decorator should be without are effectively displayed by Messrs. Walter Carson and Sons, of Battersea, at Stand 192, Row K. Probably none are more widely used or more universally appreciated. "Muraline," the perfect water paint, is made in thirty shades, and sold in a dry powder in 2½, 5, and

7 lb. packets; also in kegs. "Coverine," the celebrated white undercoating, at once, with one coat, transforms black and white, and the work can be second coated in a few hours. "Velvarine" is a lovely white Japan, for both inside and outside work. It never cracks, and works freely. Never have science and the long experience of this old-established firm combined more advantageously in the production of three such indispensable mediums making for beauty and durability.

At Stand 100, Row F, "Romuk," Limited, of Portslade, Sussex, 16, South Molton Street, W.1, and 285, Deansgate, Manchester, will invite inquiries for estimates for polishing floors, panelling, and all interior work by their unique process, which certainly transcends any other system of wax-polishing with which we are familiar. Hard woods, soft woods, and composition floorings are given a beautiful and perfect finish which always looks well and can be maintained in perfect order at a low cost for upkeep. The work is done by the company's own workmen, all specially trained, and who follow no other occupation. Twenty years' results have embodied an ever-increasing list of contracts embracing work in buildings in every part of the kingdom.

Messrs. Mann Egerton and Co., Ltd., of Norwich, London, Ipswich and Bury St. Edmunds, at Stand 15, Row B, are exhibiting a very neat and complete semi-automatic electrical plant for country and farmhouse use. Not only does this plant provide for lighting and heating but also allows for power for pumping, and the use of domestic electrical labour-saving appliances, such as electrical irons, kettles, fans, hot plates, percolators, etc. This firm also specialise in a petrol air gas system for country houses, clubs, stores, railway stations, etc., and also for laboratories in isolated districts, known as "The Sun from the Drum" or "The Willett Air Gas System." The cost of the machine is quite moderate for such a well built and designed plant, and every care is taken by the company to fix it with the greatest advantage to each particular house where it may be installed. This plant on view at their stand is well worth the attention of all country visitors who have no modern system of lighting, heating and cooking in their homes, and owners of works, laboratories, etc., will find in this system one which gives them all the advantages of coal gas.

Owing to the dearth of houses, certain mews in the West of London are being converted into small habitable flats. The offer of a coachman's house in one of them was made to a correspondent of the *Morning Post*, a fair-sized studio-room downstairs, and over it two tiny bedrooms, and tinier kitchen and bathroom, the decoration of all five to be at the tenant's cost. And the rent asked for this accommodation was £300 per annum, plus £500 premium!

Further progress has been made with the scheme of the Manchester Corporation for building houses on the Anson estate. In connection with each of the sixteen new types of houses agreed upon between the Committee and the Ministry of Health plans have been finished, and the Committee is now engaged in the work of preparing quantities. This will take about a fortnight, and then the Committee will invite tenders from local contractors for a considerable number of houses.

Rose Castle, which will get a new tenant through the death of Dr. Diggle, formed the most important domain of Inglewood Forest, and has been an official residence of the Bishops of Carlisle since the thirteenth century. During the Civil War it was held for the King by one of the Lowthers, taken and retaken by Roundhead and Cavalier, and finally given back to the Bishops of Carlisle at the Restoration. It was proposed some time ago to sell the famous old castle as being "no longer required" for an episcopal dwelling; but, so far, it has been spared this indignity.

CONCRETE: ITS USE AND ABUSE.*

By IRVING K. POND, F.A.I.A.,

Past President of the American Institute of Architects.

I have written so much abstractly on architecture and architectural principles that it is good again to get down to hard and fast matters and fix my hypotheses in the concrete. I say "again," for many years ago, as chairman of the Committee on the Allied Arts of the American Institute of Architects, I was the author of a widely circulated report from that committee dealing with concrete as a medium of architectural expression. I have had but slight occasion to put into practice the theories I then advanced, but I have continued to hold, and still maintain them.

Since that time the use of concrete in building operations has grown apace, and enthusiasts and specialists have arisen to scatter their words and their works broadcast—sometimes, though not always, the words being more attractive than the works—sometimes the words and works alike bordering on the grammatically atrocious—as, for instance, when the beauties of cast rock-faced-concrete blocks have been urged and the monstrosities themselves have made pitiable what otherwise might have been semi-respectable structures—"semi," mind you, not "wholly," respectable, for the taste which could advocate and incorporate into its product such base imitations could not create or fashion a thoroughly respectable structure. Some two years ago, while acting as chairman of a board to adjust and settle, perchance, jurisdictional differences between the carpenters, the architectural iron workers, and the sheet metal workers of Chicago, I suggested facetiously that the fabricators of imitations should be penalised by giving over to the trades whose products were imitated the erection of all such imitations. Thus stonemasons should erect all tin fabrications simulating stone cornices, architraves, or entablatures, and do plastering where plaster simulated Caen-stone—one might put it "con"-stone—on walls and in vaulted ceilings. My pleasantry was met with hearty and strenuous disapprobation; each trade wanted to tell its own little lie and to reap the benefits which each felt certain would accrue to it in a world so slightly endowed with the elements of sincerity or of good taste.

So my first item of advice, if I may be permitted to offer advice to a body of men interested in the development or handling of a comparatively new and altogether worthy building material, is to treat the product with respect, to shun and scorn imitations, to recognise limitations, which attach to all materials, as well as to all men, and to work within those limitations. This is not saying that because a thing has been done, and frequently and appropriately done, in one material it shall not be done in another or a new material which may be employed with equal propriety; however, the new material should not employ forms which are purely distinctive of the old, but should develop forms which inherently characterise the new.

What these characteristic forms may be is a subject for very searching study and analysis. Possibly through synthesis rather than analysis will the characteristic forms disclose themselves. So was it in the past with the old materials—so probably will it be with the new.

Now concrete is a material which lends itself to many kinds of manipulation. It can be cast, poured, pressed, assembled in the shop or on the job; it can be applied in liquid or in solid form to the work immediately in hand. So many are the possible methods of its application—such a diversity of means may be employed toward its legitimate ends, that some of its enthusiastic sponsors see in it a panacea for structural ills and possibly for aesthetic building ills, a substitute for all previously employed building materials—excepting, possibly, door hinges—and a perfect end in itself. Therefore, it behoves those who can impartially survey the entire field to offer both warning and encouragement—encouragement in its legiti-

* An address delivered before the National Conference on Concrete Housing, held in Chicago, February 17, 1920.

mate use; warning against its too free employment, especially where other materials may better serve the conditions. The economics of the general situation favour concrete, and through this factor alone there may arise a tendency toward its too general employment; toward its substitution for other materials which, though perhaps costing more in mere money, satisfy the senses and better fulfil geographic and climatic conditions. The cheapness and ease of casting a flat slab of concrete has led certain enthusiasts to advocate the general adoption of a flat slab type of roof in any and all parts of the country (and ultimately of the world). It is advocated for a northern climate because it can very cheaply be made strong enough to hold a load of snow and ice. But that is not what a roof is for—it is to shed snow and ice. The flat slab roof is advocated for a southern climate because the overhang for shade is so cheaply procured. The shade is desired, but not at the expense of ugliness, which results from unembellished overhangs—and concrete embellishments are expensive. The factors of ease and economy in manufacturing concrete slabs, whether to be applied vertically or horizontally, contribute to a "simplicity" which tends toward stupidity and to a barrenness which begets ugliness. Where the general form is stupid and ugly not much in the way of reclamation can be effected by proportioning of windows or application of superficial ornament. If the mass is interesting and appropriately conditioned, geographically and climatically, slight defects in details will not too seriously challenge the taste, but an ugly mass is fatal.

In spite of the fact that the learned ones will point out that concrete was a favourite building material with the ancient Romans, and that traces of it are found attaching to Greece, Egypt, and the ancient Orient, concrete as employed by modern Americans is a new material, the science and art relating to which are not fully developed. Much has been done to satisfy the conditions of its employment—much more remains to be done. The newness of an art, or the suspected newness of an art, is a sufficient cause for criticism or antagonism in the average American eye. We are the most conservative people as regards art and the arts on the face of the earth. We will not accept materials and methods on their merits and attempt to develop their intrinsic qualities or worth. Art lies about the only line along which we are conservative, however; that is, we conserve very little along material lines—and we do sling dead art about recklessly and enshrine its form in lasting and eternally reinforced concrete in which they appear more dead than heretofore conceivable. The fact that they are enshrined in a vital and vigorous material emphasises the fact of death. There are those who claim that these dead forms are alive—but only to the dead do the dead live! Concrete is a vital material full of character—let us give it its vital forms.

Because concrete has for so long a time been poured into moulds or forms, and because of the coarseness of its ingredients, one of which was stone which could go through a 2-in. ring, the earlier designers, and I fear there were architects among them, coupled in their minds concrete with crudity and coarseness of detail, and, being dependent upon precedent, and knowing not where else to look, fell upon the crude Spanish detail and broad masses of the early Spanish Missions as representative of what best might be embalmed in concrete, and so Spanish missions distorted into bungalows and cottages and palaces spread like a rash over the face of the country. As technical and mechanical difficulties were overcome and processes refined, the rash itched to take another form of disease and turned into a classic fever, with now and then a touch of Gothic "pains" noted particularly in the traceries on solids and in voids. The fever still burns, the pains still grip. Expensive forms are built up and destroyed to produce effects which already, *ad infinitum*, *ad nauseam*, have been better achieved in stone. However, this is not always to be.

The waste entailed in the destruction of specially constructed and expensive forms

has become apparent to many concrete users and exploiters, and their efforts to prevent the consequent loss, especially in case of the smaller residences and the houses with which this conference is more particularly concerning itself, has introduced an element which may well call for restraint in its application. For the sake of economy, forms are used and reused in close proximity. When such forms are not perfect in themselves and in utmost good taste, monotony in repetition becomes deadly, and woe is it to him whom cruel fate has condemned to inhabit a unit in an environment so constituted. Life and joy and self-respect must be absent from the dweller amid such surroundings. Even where the forms are charming and singly in good taste, repetition robs them of individuality and unfits them for occupancy by anyone possessed of character and personality. Individuality of character and personality are absolutely necessary in the units which go to make up the mass of a civilised and self-respecting society. Consequently another injunction, which I offer by way of advice, is to avoid wastage of forms—but even more to avoid the monotony which must follow the unrestrained employment of any "motif," ugly or charming. Introduce spice into life in the way of variety. The principle underlying this admonition is just as applicable to a mill town as it is to the most highly developed suburb. In point of fact, little or no distinction should be drawn between the mill town and the "swell" suburb. It should exist possibly only in the size of units; it should not exist in the expression of good taste and mental and bodily comfort. Perhaps I am getting ahead of the age and of the present topic. I hope not.

In spite of the manifold and varied means, methods, processes, applications, manipulations, textures, surfaces, and colours appertaining to the use and employment of concrete as a medium of architectural expression and embodiment, I am not certain that I should advise its sole and unlimited agency in housing the activities of any one neighbourhood or community. Indeed, I am quite certain that I should not so advise; and this not altogether on the ground of a needed variety, but that there are other materials which transcend even concrete as a medium of certain desired expressions of the human spirit in the art of architecture. And I should desire to see no community curtailed of, or denied, the right and power to express the best that is in it in the materials best adapted to that expression. Thus marble, granite, iron, bronze, brick, slate, each one possesses inherent qualities or characteristics not translatable into concrete even through the agency of base and artificial imitation. In the matter of brick, for example, there is scale to the unit which relates the mass to human desire and experience in an intimacy possible with no other material, while in natural colour and texture the range is boundless. But even with all that, brick needs other materials in its neighbourhood for contrast and variety, purple-green of slate, soft white of stucco, weathered gray of timbers, with carvings and turnings, and craftsmanship which cannot be imparted by a mould, however exquisitely the surface be wrought by the modeller's hand.

I assume that as an architect I am expected to say that the only way to make concrete an accredited and acceptable building material adapted to all human material and aesthetic needs is to have its essence filtered through the alembic of the architectural profession or its representatives.

If you wish me to say it, of course I will—with reservations. Now the most stupid of anachronisms are perpetrated by so-called architects (they really are untutored archaeologists or, rather, grave robbers), and the most blatant of modernisms, out off from all context of history, have emanated from, again, so-called architects (they really are unlettered sentimentalists). But I will say that the possibilities of concrete as a medium of aesthetic expression in building may best be apprehended by a sincere architect, with knowledge of modern social conditions and tendencies, working in co-operation with those who know the material at first hand and who also are sincerely working to exploit

nothing but to develop the latent and inherent possibilities of a worthy material. Such architects exist, such material men exist. They should come together. It should be a function of such conferences as this to bring them together.

I must say one word here as to what should characterise the architect in whom the material man and the public may well place their confidence, being assured that his will be leadership—real leadership and not selfish and autocratic domination. That architect must not exploit any material or system, but must be able to recognise and free to employ the most effective and appropriate under the individual conditions. He must sense the sociological, including the social, ethical, and aesthetic tendencies of his time so as to aid his client in the sympathetic expression of them, curbing wasteful, demoralising, disintegrating tendencies, and aiding toward social unification; diagnosing present conditions and meeting the situation with skill and clarity of vision rather than in applying formulae learned by routine in the schools. The architect should think in advance of the public and see the goal and the way thereto more clearly. Pity the public which follows, and condemn the architect who pursues, the selfish and blind course.

Now, in so far as this paper constitutes a report to be discussed, or otherwise sent to oblivion or laid aside for future reference, which amounts to about the same thing, its elements may be summarised and augmented as follows:—

IMITATIONS.

Concrete has a character of its own; there is no call to torture it into imitations of stone, wood, bronze, or other material. Details cast in moulds should bear the plastic touch of the modeller and not the chisel marks of the sculptor.

ECONOMY.

Forms suited to the special purpose should be used—and forms extravagant of labour and material should be avoided and should be employed only where duplication can be accomplished without monotony.

MONOTONY.

Even a good thing ceases to be a good thing when used in excess, and two concrete houses from the same forms, placed side by side, is an excess—such treatment is permissible only in barracks where men are in uniform and drilled into the same line of thought, act, and movement, all individuality being eliminated.

SLABS.

Flat slab roofs may at times and in places be appropriate. A general use would be deadly unless counteracted by features, the initial expense of which would more than offset the element of economy, which alone would seem to call for a wide prevalence of such roofs.

MONOLITHIC FORMS.

This method presents advantages in certain types of structure. The appearance of mass and strength is enhanced by monolithic treatment. Openings and corners can be characteristically and ornamentally treated at slight or no additional expense. Houses pre-cast from monolithic forms and transported as slabs or as units are to be looked upon with suspicion as tending to create types and general monotony.

BLOCKS.

(a) *Units.*—Concrete blocks laid to be effective as units may perform a legitimate aesthetic as well as structural service. Texture and colour can be given them. Their danger lies in exaggerated scale and general uniformity. Stone has the advantage of lending itself to cutting and fitting in length and height without consequent economic waste. The manufacture of concrete blocks should be studied with variety of size as well as appropriate scale in mind. Corners and angles should be true, and crude and rock-faced surfaces avoided.

(b) *Baking for Stucco.*—This is a legitimate field for the use of concrete blocks. Scale need not be taken into account, neither need such matters as sharpness of corners

and angles or crudity of surface. Uneven chipping where blocks are cut approximately to the desired outline presents no obstacle to the perfect finish. Surfaces should be such as to which the stucco will most readily adhere.

COSTS AND PERMANENCE.

In a letter from an official of the United States Housing Corporation I find these words: "We were satisfied that there were certain types which would produce a good practical house at a very moderate cost, but it appeared to us that this could be done only where the same unit was repeated indefinitely, and our belief was that this would produce a deadly monotony." As to the monotony we have already heard; as to the cost and permanence or durability, let me say that there may be cases where permanent houses would be a drawback in a developing community. There would be very little salvage in a wrecked concrete house, while the wrecking would entail almost as much expense as the constructing. Unless a community is well "zoned," buildings of a too permanent nature are an economic waste, even though the initial cost may be the same as for a building of less permanent character. Where, as in many of our communities, change is the order of the day, well constructed buildings of a more temporary nature are desirable. Buildings of a temporary nature can be "fire stopped" and made safe for occupancy.

FIREPROOF CHARACTER OF CONCRETE HOUSES.

In the letter above referred to, these words appear: "We found that the people who were interested in the concrete house were, almost without exception, trying to build every part of the house in concrete, including porches and all the trim." This would seem to me to indicate a deficient sense of humour on the part of the people referred to, as well as defective vision. I will grant that the designs of many architects who never intended to make a joke of their work are such as to be readily translated into concrete, and would not lose in the process; but a concrete man with a sense of fitness—I'll call it humour—would not deign to effect the translation. I must still warn the enthusiast against excess; excess of imagination as well as excess in material means, or some of them may wish to make the door hinges out of concrete after all! Fireproofness, so to speak, and permanence are good qualities, for which it is possible at times to pay too much.

METHODS AND MEANS.

How to make the house reasonably fire-proof, reasonably durable, reasonably attractive and reasonably economical in cost and in upkeep presents a series of problems for the architect and the concrete expert. As an architect, I shall receive the findings of the concrete expert and will make such application of the methods and means presented as may suit the particular case. I will even present the case beforehand to the expert if it is not already covered—and aid him in his solution. I will even ask him now to present types of floors in structure and finish which are durable, economical and appropriate to a small house. I will ask the same concerning the roofs, high-pitched, low-pitched, and flat.

There are many problems to be solved in connection with the design, construction and location of the concrete house, and I congratulate the concrete and cement interests that they have enlisted the services of so many serious-minded and enthusiastic men in the quest for the best along these lines. I hope that architects of vision and deep feeling may be called upon to co-operate.

On Lady Day a new stained-glass window was unveiled in the Lady Chapel of the Church of the Annunciation, Stanground, Hunts. The central light contains a representation of the Blessed Virgin Mary, seated beneath a canopy of blue, and holding the Divine Child on her lap. On one side stands St. John the Baptist, and on the other side is St. Etheldreda, the two patrons of the parish and of the diocese. The work, in design and execution, is that of Mr. A. K. Nicholson, of Tufton Street, Westminster, brother of Sir Charles Nicholson, the well-known architect, and also of the organist of Westminster Abbey.

Our Illustrations.

INTERIOR OF A COUNTRY HOUSE HALL.

This illustration is a reproduction of a water-colour shown at the Royal Academy Exhibition, 1919. Mr. Jesse D. Cast, of Balham, designed it, his commission being to adopt the period of Francis I. The narrowness of the panels retains a certain Gothic feeling, whilst in detail Italian influence is evident.

THE EGYPTIAN EXPEDITIONARY FORCE MEMORIAL AT JERUSALEM.

This is to be erected on Mount Scopus, one of the most commanding sites round Jerusalem, about one and a-half miles to the north-east of the city, near the Nablus road. The cost will be about £15,000, of which £11,000 has been subscribed by officers and men of the E.E.F. The simple and bold character adopted befits its purpose, and the rugged nature of the surrounding country. The monument is to be built of local stone, with doors and window-frames of bronze. The great central pylon will be a landmark, and is flanked by subsidiary pylons at the four corners with a semi-circular colonnade 23 ft. high to the east and west. On the south side at the base of the main pylon facing the city is a court containing a sculpture group, larger than life size, representing mourning women and children of the Allied nationalities engaged on this front; this group is surmounted by a figure of "Victorious Peace" standing in a niche. The sculpture is to be part of the architecture. On the north side in a corresponding position to the sculpture group is a bronze doorway to the interior with two stone staircases one each side leading to the flat roof over the semi-circular colonnade, from which magnificent views of the city and surrounding country can be obtained. The interior consists of three domed and vaulted chambers in which are stone panels in a series of apsidal recesses on which will be carved the names of all those who were killed, died of wounds, or were posted as missing and since presumed dead. Various other records of the campaign will also be placed in the interior, and the halls will be available as places of rest and meditation for visitors. The main dimensions of the memorial are as follows: Height, 110 ft.; length, 154 ft.; width, 126 ft. The design is by Mr. W. J. Palmer-Jones, of the firm of Messrs. Palmer-Jones and Grant, 11, Buckingham Street, Adelphi, and was chosen by Field-Marshal Lord Allenby from a number submitted in competition among the officers and men of the E.E.F.

RADLEY COLLEGE CHAPEL, ABINGDON.

The illustration shows the War Memorial designed by Sir T. G. Jackson, Bart., R.A., for those of the school who fell in the South African war. The monument is of alabaster with a bronze panel bearing the names. The statue of St. George is by Sir George Frampton, R.A., the rest was executed by Messrs. Farmer and Brindley.

The committee in charge of the King Edward Memorial to be erected at Holyrood have given instructions to proceed with the work at once, with a view to an unveiling ceremony by the King in July next.

The Executive Committee of the Burns' Federation have agreed to accept the offer of Messrs. Harland and Wolff, Ltd., to remove the remains of Highland Mary, and also the monument, to a site in Greenock Cemetery, adjoining the James Watt Memorial. A mural tablet in Laird Street will locate the place where the remains were originally laid.

ROYAL SOCIETY OF PAINTERS IN WATER COLOURS.

The 174th exhibition of the Royal Society of Painters in Water Colours numbers 215 subjects, and is of fairly level all-round interest, to which the industry of not a few of the exhibitors has materially contributed.

Mr. Hughes Stanton, R.A., the Vice-President, sends seven, the two of "Equihen, France" (2 and 14), perhaps the best. Mr. Arthur Hopkins follows with six, "The Fight Interrupted" (3), and "A Rough Day for a Bathe" (96), both of considerable merit, as is also "The Stepping Stones" (124). Of Mr. Pyre Walker's ten, "Squally Weather near the Isle of Wight" (1) well deserves its primacy of position. "The Farm Yard" (8) and the "Mill Dam" (12), by Mr. George Clausen, R.A., are welcome examples of their kind, while, in another vein, "Camblain L'Abbe-Snow" (157) will well please his many admirers. Of the nine she sends, Miss Clara Montalba probably scores best with "Trabaccolo, Venice" (6), but Numbers 30, 39, and 45, all scenes of the delightful city she knows so well, are good. Mr. Thorne-Waite distributes his favours more widely, but always with discretion both as regards choice and method; perhaps most so, among the nine sent, is his "Golden Light" (204 on Screen No. 2). Mr. Henry S. Tuke, R.A., is best among his eight with his "Morning Sun" (14) and "The Schooner" (192). "Criffel from Bowness" (15), and "Warwick Castle" (101) are Mr. Robert Little's excellent contributions to his total of seven.

Mr. T. M. Rooke is equally fortunate with all his five subjects, "The South Aisle of Westminster Abbey" (41) and "The Cloister Doorway" (136) being fully up to his usual standard. Mr. S. J. Lamorna Birch varies his always delightful studies of Devon and Cornwall (21, 22, 60) with one of "Ludlow" (153). Mr. Adrian Stokes, R.A., well sustains his reputation with "The Lake of Thonau" (56) and "The White Boat" (62). "Chartres Cathedral" (91) and a "French Market Town" (92) by Mr. Robert W. Allan, is good; and so is his "London Bridge" (120). Mr. Robert Anning Bell's only exhibit is "The Toy Theatre" (94). Somewhat akin in character, and each excellent, are Mr. Henry Henshall's "The Knitting Lesson" (113) and "The Foster Mother" (213).

Mr. J. C. Dollman is, as usual, fortunate in all his six Sussex scenes (50, 133, 140, 142, 165, and 166). Sir Harry Johnston, G.C.M.G., K.C.B., has one of the most striking pictures in the exhibition, "Water Birds on an African River" (163), which will commend itself alike to the ornithologist and to the lover of brilliant and rare birds. Mr. James Paterson, R.S.A., sends four familiar scenes in Edinburgh (33, 150, 154, 161), rendered as always with a charm that lends fresh interest even to the most familiar observer, and one less known, "Port Bahn, Iona" (67), but none the less welcome. Mr. J. H. Lorimer, R.S.A., is less fruitful, but for that reason all the more likely to be appreciated for his single subject, "Cloud Capped Towers" (135).

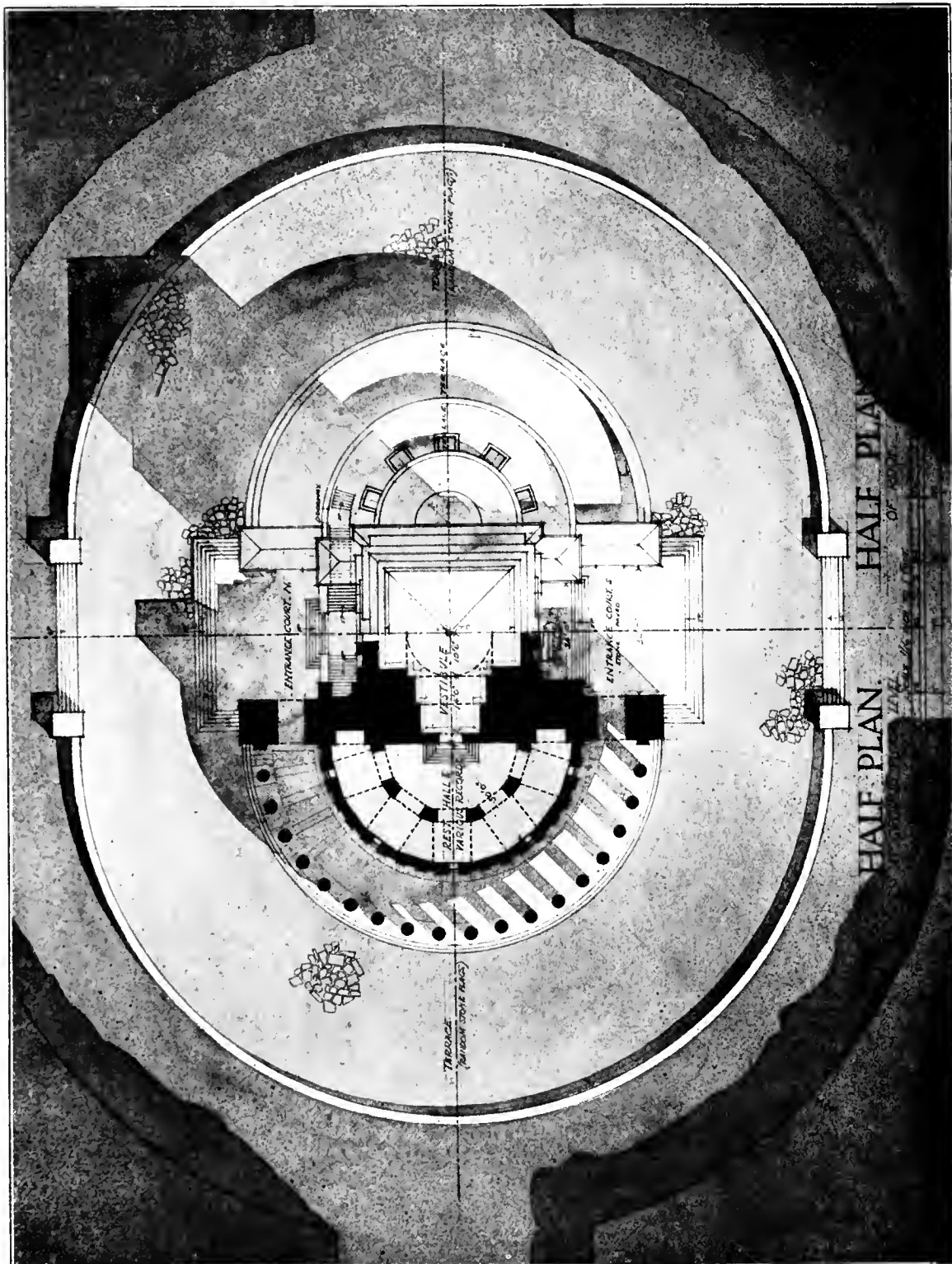
Mrs. Allingham is also only once represented this year, but as effectively as ever, by her "Surrey Cottage" (207). Miss Fortescue-Butler sends a striking "Highland Mary" (73).

COMPETITIONS.

CLEETHORPES PEACE MEMORIAL COMPETITION.—The Competitions Committee of the Royal Institute of British Architects desire to call the attention of members, and licentiates to the fact that the conditions of the above competition are unsatisfactory. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime, members and licentiates are advised to take no part in the competition.

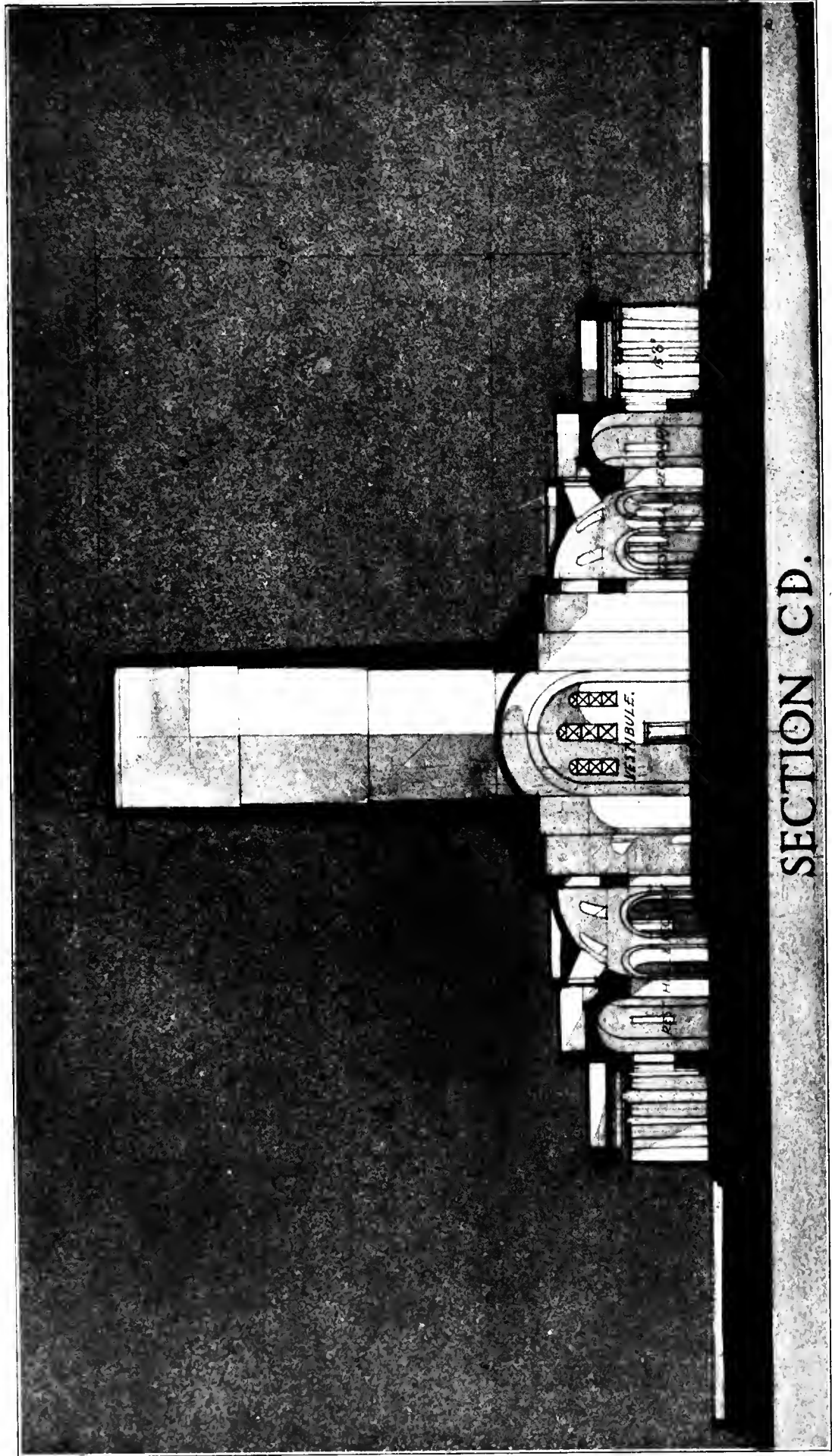
The Royal Commission on decimal coinage in their well-reasoned report express the opinion that it is not advisable to make any change in the denomination of the currency and money of account of the United Kingdom, with a view to placing them on a decimal basis.

THE BUILDING NEWS, APRIL 2, 1920.

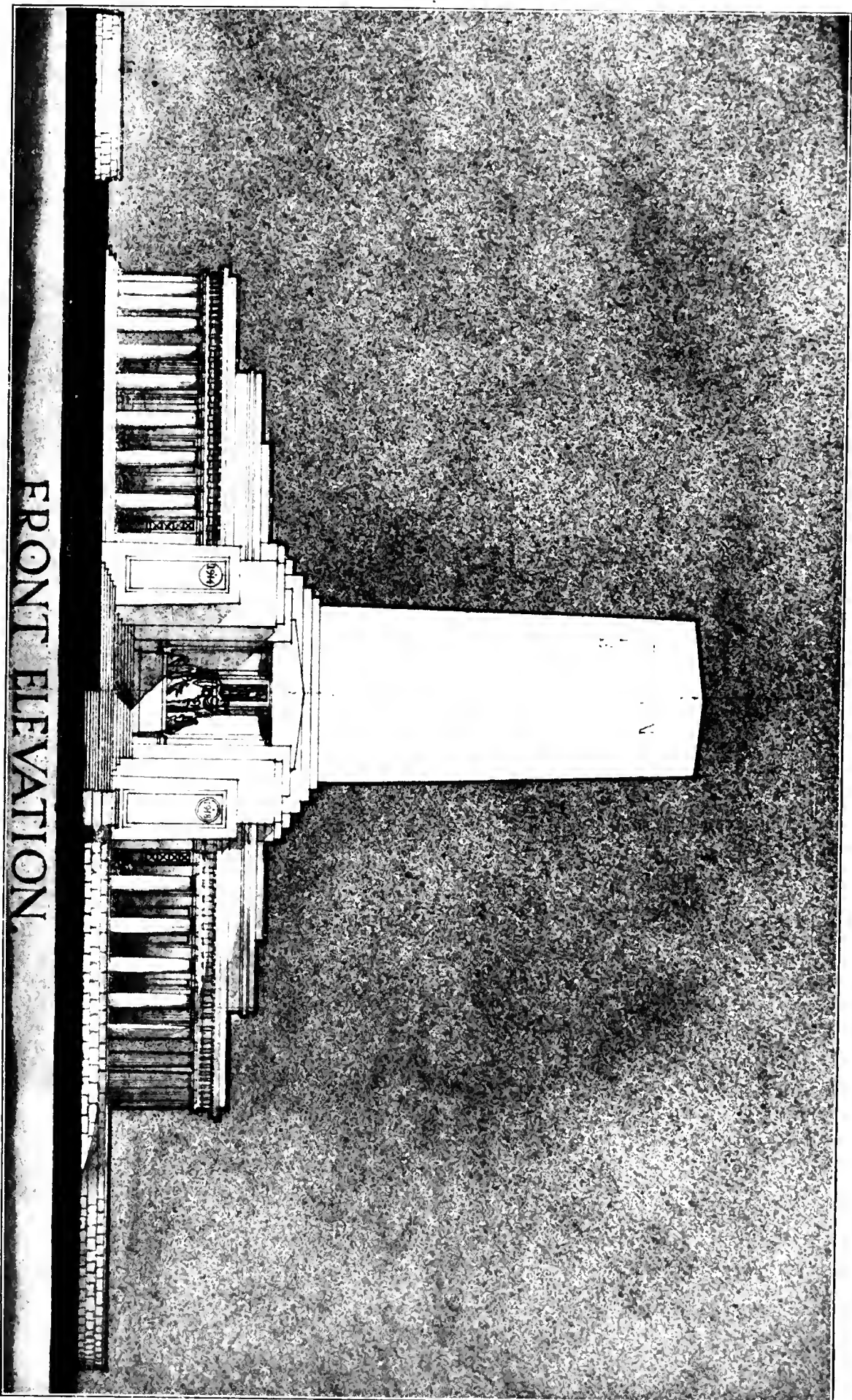


THE EGYPTIAN EXPEDITIONARY FORCE MEMORIAL, MOUNT SCOPUS, JERUSALEM.
Mr. W. J. PALMER-JONES, Architect.

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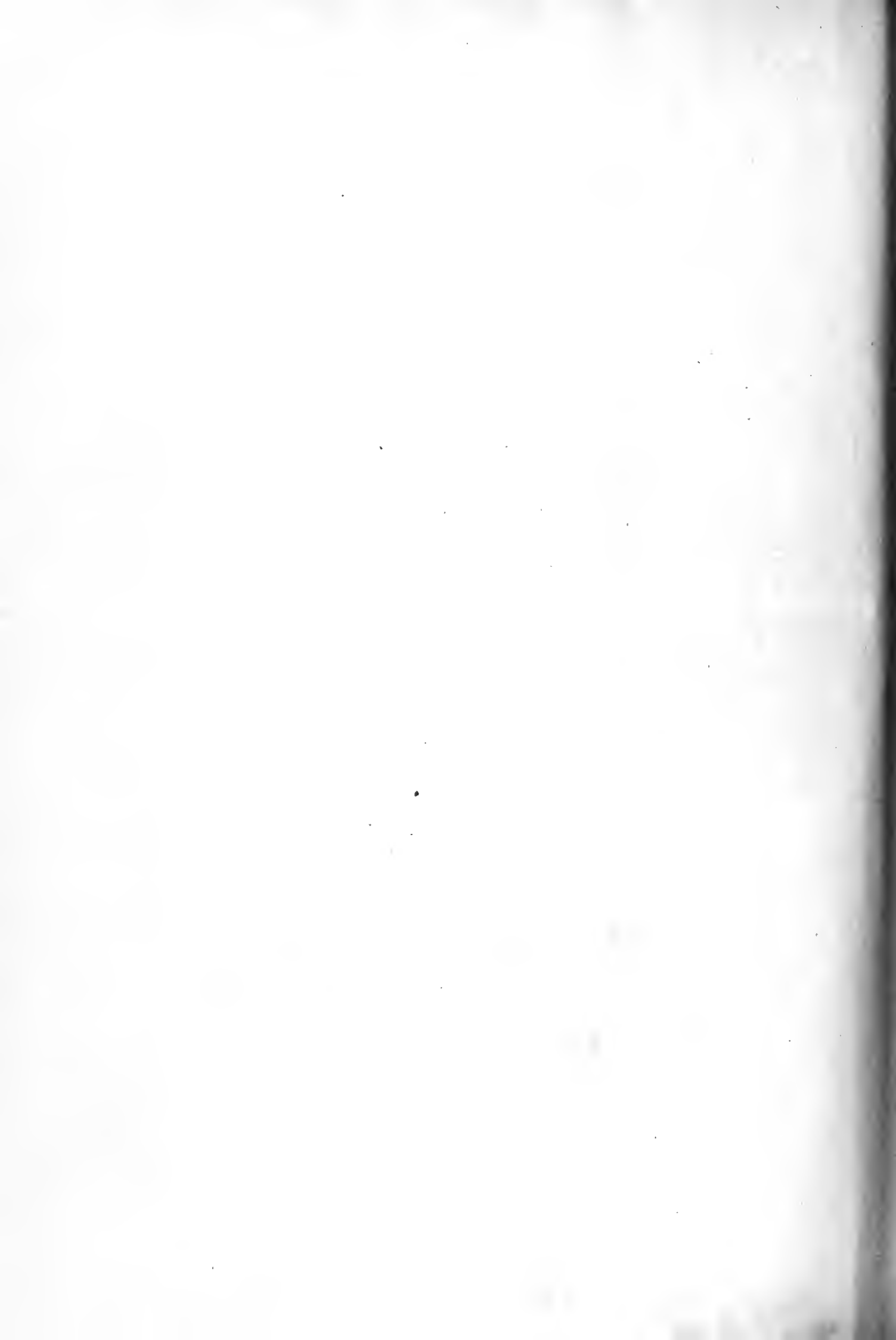


THE EGYPTIAN EXPEDITIONARY FORCE MEMORIAL, MOUNT SCOPUS, JERUSALEM.
Mr. W. J. PALMER-JONES, Architect.



FRONT ELEVATION.

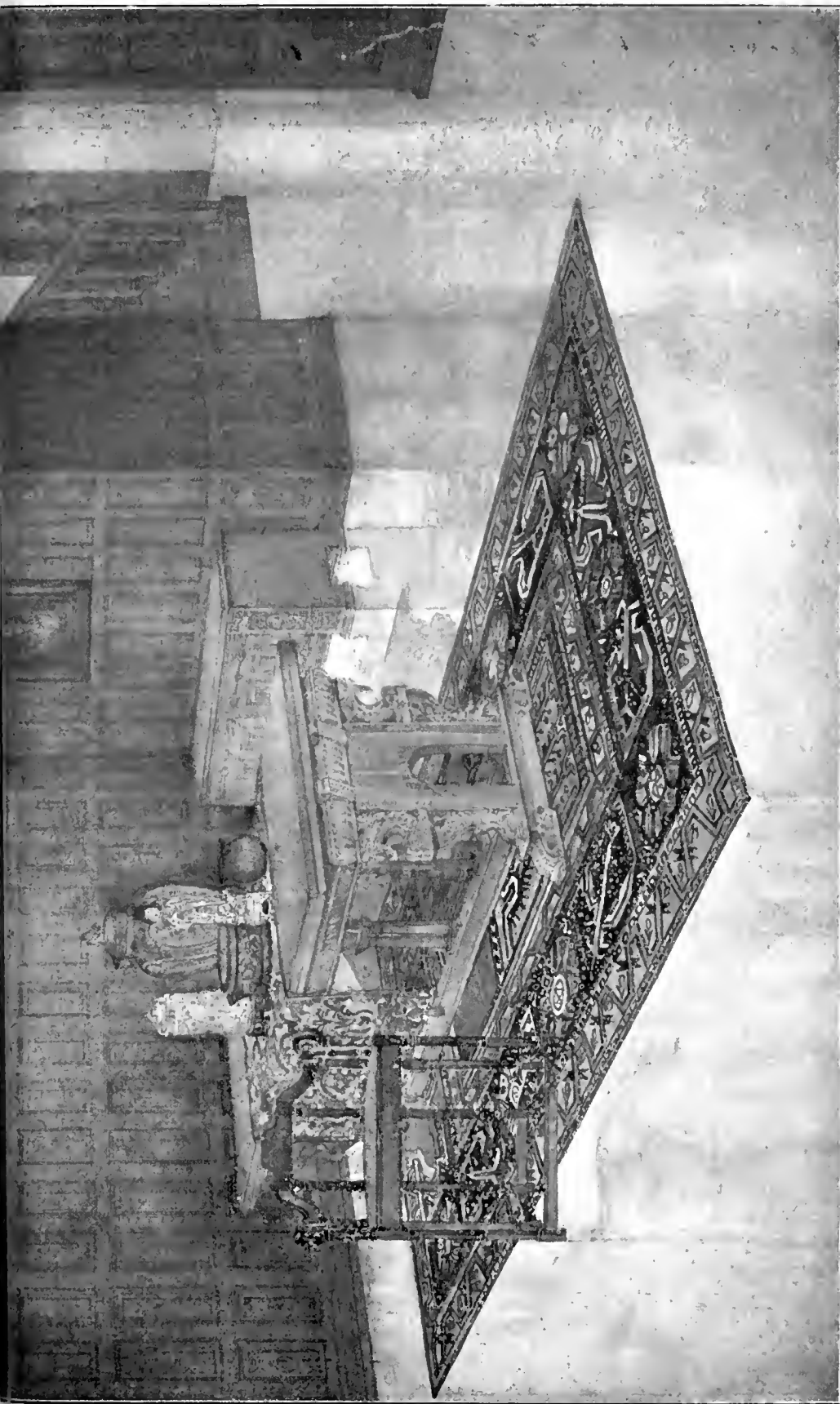
THE EGYPTIAN EXPEDITIONARY FORCE MEMORIAL, MOUNT SCOPUS, JERUSALEM.
MR. W. J. PALMER-JONES, ARCHITECT.



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INTERIOR OF A COUNTRY HOUSE HALL.—FROM THE ROYAL ACADEMY.
Designed by Mr. Jesse D. Cast.

DISCUSSION UPON SIR AMBROSE
POYNTER'S PAPER.

(Continued from page 232.)

Our social relationship cannot be improved until the meaning of the processes of industry is thoroughly comprehended by both Capital and Labour, and until the ultimate value to the individual and the community of such factors in their relation to production and profits and wages is fully understood.

It must be agreed that production is good or bad for the individual and for the community, just as profits are likewise good or bad. High wages, regulated hours, and improved conditions of labour are also distinctly good or bad for both the individual and the community. All these things are far too important and too closely associated with the vital issues of life to be merely incidental.

A great change has, as it were, suddenly taken place in the outlook and conditions of life. Change, we all know, is eternal, but we must not be content, as we have been hitherto, simply to adapt ourselves carelessly; we must attempt to control and fashion these changes. We can certainly endeavour to give some conscious direction to these changes, which all know are inevitable.

The British Isles have a population of something like 45,000,000, and comparatively few in pre-war days and fewer to-day have as many of the good things of life, that is to say, the necessary good things, as they would desire to possess.

The housing conditions in this country before the war were, I think it is now fully admitted, a disgrace to civilisation, and the great labour unrest had its inception. I am convinced, in the disgraceful conditions under which the great mass of the working people were condemned to exist.

It will, I think, be generally admitted that before the outbreak of the great war we had reached a condition far removed from a peaceful social life. The entire nation was divided into factions, each struggling for its own part, regardless of the general interest. The war with all its ghastly story hastened the process which inevitably was in the making.

The discontent of labour arose because society, developed upon undefined lines, left no place in its processes for the ranks of labour. Millions of men never seemed to realise they were alive until the war came. Their lives had been spent in work without any conscious aim in life. They became obsessed with the idea, born of false doctrines taught in war exile, that they had worked to make others rich. They refused to admit that all that is best in life they owed to brain and not to muscle, and they set up the claim to the sole right of the title "worker."

Not very long before the outbreak of the war, it was asserted, and with a certain accuracy, that between one-quarter and one-third of the people of the British Isles were living upon the border of starvation, the proportion being the smaller or larger fraction according to the opinion as to exactly where lay this border line, some fixing the line further from the central standard of comfort than others.

The truth of the statement that the American workman was better clothed than his British comrade was in those days well recognised. The shortage in school accommodation for the education of the children was also fully well known. The third great disability under which the workers of this country laboured was the absolute famine in houses. For years this increasing famine had alarmed those who gave the subject careful and serious attention; but the community as a whole was quite content to trust to the unregulated and unsatisfactory results of supply and demand for the solution of this the greatest of all social problems.

I have stated on many occasions lately, and I do not think the statement has been controverted, that the shortage before the outbreak of the war in houses for the people reached at least 250,000. If, therefore, the average size of a family in this country be placed at five persons, we have one and a quarter million people without homes. If we want to build, however, not merely to

supply the bare necessities of life, shall I say, the commercial situation, but for realisation of the full national life, which is the goal of our conscious aim, this figure of one quarter million houses is preposterous and, perhaps, should be nearer double that figure.

This was the state before the war. How do we stand nationally in respect of houses to-day? To meet the bare necessities of the people we must have at least three-quarters of a million houses, perhaps even a million houses. Taking, however, the former estimate and applying the calculation of five persons per house, we find that three and three-quarter millions of people are without the bare necessities of life in so far as housing accommodation is concerned.

No one will deny that the provision of adequate and satisfactory homes for the people is an absolute essential of a happy, peaceful, and well ordered national life, and no one certainly will admit that this essential has ever been fulfilled in the past.

What was the cause contributing to the shortage in pre-war days of the homes so urgently needed for the people, and why was the known annual deficiency in houses allowed to accumulate year by year until it reached such alarming proportions?

We know that the deficiency in pre-war days was due to the failure of the supply to meet the demand, and that the supply lagged behind the demand simply because those agencies in whose hands rested the provision of houses considered, rightly or wrongly, that the supply of the most needed type of workers' home was not an economic proposition, and therefore the efforts of these building agencies were directed in other and more satisfactory channels.

As wages increased, and as hours of labour were reduced, so the cost of building gradually but surely increased; but I think it will be generally agreed that there has been for many years a "dead set" against the paying of higher rents.

It appears to be obvious that, unless rents advanced as the cost of building advanced, as represented by higher wages and reduced hours of working, the time was necessarily bound to arrive when that type of house, with rents fixed arbitrarily, as it were, without a definite and proper relation to the cost of production, would cease to be built.

I have said on many occasions that the law of supply and demand in the pre-war sense in respect of houses for the people is dead. As in pre-war days when the supply of the necessary type of house so urgently needed was rapidly falling behind the demand, so to-day, but unfortunately in a much greater degree, the demand for houses was not, and is not, at a price above the cost of production, but at a price below the cost of production.

At the present time there is an unaccountable obstinacy upon the part of the "worker" to pay a price for the product of his labour commensurate with the wages he obtains for the manufacture of this product.

When in pre-war days there existed a large section of the community whose wages were too low to enable them to pay an economic rent for a reasonable and proper home, I advocated, and feel sure that my advocacy was justified, that the community at large should have taken over the provision of the homes for these people as in the nature of a public service. That such a service was equally as much the duty of the community as the provision of a good water supply or a proper and satisfactory drainage system. That the difference between the economic rents of such houses and the rents possible of payment by these low waged workers should have been a charge upon the community. Alternatively that the wages of these people should have been raised to enable them to pay an economic rent.

The former proposition in my opinion has disappeared in the light of present post-war circumstances, and I think it is universally agreed that the worker should earn sufficient to enable him to pay the proper rent for a proper home.

That houses must be built to-day at a cost that prohibits the obtaining of an economic rent is an impossible proposition and will

eventually lead to the claim that all other things required by the people should be manufactured and disposed of at a price below the cost of production, which is absurd.

The cost of all articles, whether houses or boots and shoes, whether clothes or bread, must increase proportionately as the wages of those engaged in the manufacture increase, or as the hours of labour of those so engaged are reduced—so far as such reduced hours limit production.

What, then, is the difficulty in connection with house building? Has the cost of building increased in the same ratio as the increase in the wages of the workers and the reduction in the hours of labour?

I suggest that the entire trouble arises from the fact that the answer to this latter question is in the negative.

The essential processes of genuine constructive effort are, without question, Production and Profits, and there can be little doubt that the nature of these essential processes is neither understood by employer or employed.

The real root trouble to-day and the chief cause of the present serious national crisis is Restriction of Output. Is this restriction attributable to the refusal upon the part of the manual worker to maintain a reasonable, or, shall I say, pre-war output, or the refusal upon the part of the brain-worker to apply himself to the problems of life?

We all know that this refusal to maintain output is a fact, whether it be in the deliberate limiting of individual energy such as is so apparent in most branches of the great building industry where individual effort counts for so much, or in the refusal to accept labour-saving machines in other great national industries.

We read that America has 35,000 automatic looms, whereas this country has only 12,000, and that only 8 per cent. of our coal is cut by machinery, where America cuts 50 per cent. of hers mechanically. In this latter respect alone is explained the reason for the steady increase of prices in this country. Germany was in pre-war days steadily beating us in the markets of the world in the cutlery trades, because of the adoption in that country of the best machines and the best methods.

According to the Census of Production, British industries used only one-third to one-half the horse power per thousand workers that America used.

To-day architects are getting desperate over the question of building costs. No part of the great science of building has received more attention during the last ten years from the members of this great profession than that affecting the building of homes for the people. In domestic architecture, British architects are in the front line. Architects have always been blamed for the inferior houses in which the great mass of the people have been and are forced to live; but in reality architects have had little to do with these houses. The pre-war house of the worker, before the days of the Garden City and the Town Planning movements, in the vast majority of instances, had no assistance in its construction or design from the architect. His services were almost always considered quite unnecessary, and the fees for his assistance so much waste of money.

Houses were built in thousands "like all other houses." Erected by the mile, and the architect was engaged only and not always even then, to prepare a simple plan of stereotype house, for submission to and approval by the local authority. Any attempt upon the part of the architect to obtain a variation of plan or design, more particularly if that variation necessitated the use of a little more land per house (as it generally did), was immediately vetoed. The speculative builder either "off his own bat" or upon instructions from the future building owner, gave directions to the architect for so many houses upon a certain piece of land, of exactly the same frontage, depth and plan as those already in the same street or in some other street.

When the garden city idea and town planning principles became better known, the architect had his chance and used it to the full. His great trouble was always the fixed

cost or almost fixed cost per house. We all remember the cottage exhibition held in 1907 (Sheffield), 1908 (Newcastle-on-Tyne), and 1910 (Swansea), when the National Housing and Town Planning Council did so much towards the better planning of areas and of houses.

Prizes were awarded for the best money value, and in the case of the last-named exhibition (as I think with the others), there were four classes of houses.

Class A was a cottage with two bedrooms, living room, and scullery with bath, and the maximum cost was not to exceed £175.

Class B a cottage with three bedrooms, living room, scullery and bath, maximum cost £200.

Class C a cottage with three bedrooms, and bath-room, parlour living-room and scullery, maximum cost £225.

Class D an open class, number of rooms not specified, maximum cost £350.

The maximum prices were to include architects' fees, and builder's profit, but not fences, boundary walls, cost of papering or colouring walls, but included connections of drains to sewers in the roadways.

This was only 10 ten years ago.

Architects from all parts of the country put their very best efforts into the designing of the houses erected in these exhibitions, but were criticised even then for the smallness of the rooms and the lack of many little accessories that go so far to make the home comfortable. It seems in looking over these conditions and examining the plans of the cottages erected, that the results obtained for £200 and less were truly wonderful.

What has happened since these days to make the position so absolutely hopeless as it is to-day?

The cost of common bricks (at works) in pre-war days was, say 24s. a thousand. To-day the same bricks are 84s. per thousand. A superficial yard of 9 in. brickwork in pre-war days cost 7s. 6d., to-day it is 26s.

Masons received in pre-war days 9d. per hour, now they receive 1s. 9d.; labourers had 6d. per hour, and now receive 1s. 6d.; joiners 9d. per hour, and now are paid 1s. 9d.

Brickwork in the same part of the country where the above prices ruled was executed at the rate of 750 bricks per man per day (average). To-day, I am informed and am satisfied that the information is correct that the output per man per day does not average more than 250 bricks.

A block of cottages erected in 1885, cost of labour only (brickwork only), £700. In 1912, the same amount of work cost for labour only £1,740.

Of the total increase in the cost of the labour upon this piece of work, £100 was due to increase in wages and £940 was the national loss due to diminished output.

The cost per superficial yard in 1885 for the labour only of 9-in. brickwork was 8½d. The bricklayer being paid 9d. per hour and the labourer 6d. per hour.

In 1912, the same labour cost 1s. 9d. per superficial yard, the bricklayer being paid 10d. per hour and the labourer 7d. per hour.

In 1920, the same labour (for one superficial yard of 9-in. brickwork) costs 9s. 4d. The bricklayer being paid 1s. 9d. per hour and the labourer 1s. 6d. per hour (assuming that one labourer attends to one mason).

In 1920, the cost, therefore, of a similar block of cottages amounts, for the brickwork only (labour only), to £9,360. Compared with pre-war costs the increase in the cost of this work as a result of increased wages is £1,543, and the increase in the cost of this work as the result of restricted output is £6,067.

The reason for the great increase in the cost of building is to be found in the fact that there has been, without the slightest doubt, a great diminution of output.

Upon the face of it, it appears fairly obvious that a cottage which in pre-war days was built for £200 cannot cost £800 and even more, if only increased wages are to be taken into account. There must be, and is, a much more important explanation for the amazing rise in the cost of the work.

I think it can be fairly easily proved that of the difference of £600, between the pre-

war and post-war cost of a £200 cottage, at least £200 is accounted for by restriction of output upon the part of those engaged in the various branches of the building industry. If there could be an acceleration to quite a small extent of the pre-war output, I believe the £200 pre-war cottage should not cost more than £500 to-day.

The employer who refuses to be educated, who embraces old-fashioned methods, and does not accept new conditions, is limiting output and doing untold injury to the country. The worker who refuses to use new machinery or adopt new methods or deliberately reduces the quantity or quality of his output is also injuring his country and bringing untold misery upon the community and particularly upon his own class.

There is no greater fallacy than the widespread belief, unfortunately common to-day in this as well as in other countries, that the limitation of output reduces the possibility of unemployment or that there is only a limited amount of "work" in the world, and that therefore if the output be increased by individuals there must inevitably be over-production and therefore unemployment.

The doctrine that the world can only make use of a limited quantity of manufactured articles, and that if this quantity is manufactured in the cheapest and most rapid manner thousands would quickly be unemployed, has been so assiduously taught in this country during the past few years that the workers have become obsessed with this doctrine. Even in the light of the education produced as a result of the war, many despair of ever removing the effects of this utterly false teaching.

The industrial future of this country and indeed of the world is irrevocably bound up with the necessity for the removal of the baneful influence of this fallacious doctrine.

It is impossible to exaggerate the seriousness of the bearing of the pernicious doctrine of restriction of output upon the grave national problem of housing.

Something like 200,000 workers are required to repair the gaps caused by the war in the ranks of the building industry. With a full and unrestricted output, the building industry has to-day only 75 per cent. of its pre-war capacity.

To erect 200,000 houses per annum, and this should be the annual supply for ten years, 500,000 men are required; and these men, in order to carry out such a building programme, will be required to maintain their full pre-war output.

The engagement of such a number upon house building alone would leave less than 200,000 men for all other building work throughout the country, and would demand the recall of many thousands of building trade workers who have gone into other trades, chiefly engineering and mining.

What are the actual facts in regard to housing progress? And from these facts are we not bound to view the future with grave misgivings?

During the past six months only 560 houses and flats have been completed and ready for occupation. The normal requirement in this self-same period is 50,000 houses, without a single house towards the 750,000 deficiency.

A further 992 are, we are given to understand, nearing completion.

The average cost of the completed houses has been £757, exclusive of land, roads, and sewers. The highest weekly rents (so far approved) for the houses is 20s. per week, and the lowest 7s. per week in each case, exclusive of rates.

The actual number of schemes for the laying-out of areas, approved of by the Ministry of Health to date is 4,606, comprising in all 36,000 acres.

The number of schemes for the building of houses approved by the Ministry of Health to date represents 111,426 houses.

If the progress to-day was comparable to any extent with the above record of schemes submitted and schemes approved, there would be some likelihood of the housing problem being grappled with effectively.

Unfortunately, all these figures of schemes submitted and schemes approved for the laying-out of areas and for the construction of

houses are, after all, only paper figures. I do not for a moment suggest that the progress in connection with house building has not been considerable; I do definitely state that unless this progress reaches to such a point that the output of houses exceeds 100,000 per annum—i.e., the normal requirements of the population of England and Wales, this country will drift into a state second only in its serious nature to that had we been unsuccessful in the great war just closed.

It is interesting to note that the Ministry of Health hope to complete 200,000 houses in one year, and although half this period has passed, the total schemes approved represents little more than half this number.

Although I think national housing, so far as it has suffered as a direct result of the war, deserves a great national grant to help in re-establishing at least its pre-war position, I believe there is a very serious danger ahead from the economic point of view.

It is reasonable to suggest that if millions per day could be found to carry on a gigantic war and gain a great victory, at least three months' war expenditure can be found to put housing in a reasonable position, and so save grave internal national discontent. I think, however, that with production brought up to a pre-war level and wages fixed at a proper and reasonable amount, houses should be built, and I think one should say houses must be built, at a cost rendering certain possibility of the obtaining of economic rents.

The discussion was continued by Messrs. W. J. H. Leverton (Architect to the Ministry of Health); Percy B. Tubbs, F.R.I.B.A., P.P.S.A.; H. Freyberg, F.S.I. (Member of Council); C. McAthur Butler, F.C.I.S. (Secretary of the Society); J. Herbert Pearson (Member of Council); E. J. Partridge (Past Vice-President), and the President, Mr. Edwin J. Sadgrove, F.R.I.B.A.

CHIPS.

All building operations in connection with new places of amusement are to be prohibited by the L.C.C.

The Scarborough War Memorial will take the form of a marble-lined temple, to be erected in the Valley Park at a cost of about £7,500.

Fiel Island, including the historic ruins of the castle, has been presented by the Duke of Buccleuch to the town of Barrow as a war memorial.

Loans of old English stained glass of the fifteenth century and French Gothic of the sixteenth have been received by the Victoria and Albert Museum.

For the financial year 1920-21 the estimates of the L.C.C. amount to £19,856,990, a sum which the Finance Committee report is very largely in excess of the Council's capital estimates for any previous year.

A proposal is before the Coal, Corn, and Finance Committee of the City Corporation for sanction to expend £458 out of the Corporation's moiety of the Gresham Fund for the renovation of the clock and carillon machinery and recasting of the bells at the Royal Exchange, which have been defective for some time past.

Owing to an outbreak of measles in the school of the Architectural Association, 34 and 35, Bedford Square, W.C.1, it was considered advisable to postpone for the present all meetings and social functions at the Architectural Association. The conversation and dance, therefore, that was to have been held last Friday will be held on Tuesday, April 20, instead, and the tickets already issued will hold good for that date.

Mr. Frank Brangwin greatly puzzled a meeting last week of the Arts Committee of Carnarvon National Eisteddfod. He wrote consenting to give his services gratuitously as adjudicator on a set of cartoons; but one portion completely baffled the committee. The majority agreed that there was some mysterious reference to "smoke." In despair, the chairman submitted the document to a pressman, who discovered that what the genial artist desired to say was: "I hear that they smoke a mild cigar of excellent quality at Carnarvon, and should your committee care for me to act as adjudicator as to their merit, I will do so with pleasure."

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House.

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Currente Calamo.

The *Times Engineering Supplement* very rightly describes the Victoria Memorial Hall, Calcutta, now nearing completion, as a triumph of both engineering and architectural skill. The chief difficulty to be encountered, as our readers will remember, was the treacherous nature of the Calcutta soil, in which nearly all heavy structures sink more or less. The foundations of the building, which we illustrated in our issues of February 17 and April 25, 1905, and which was begun in 1904, showed signs of subsidence that gave rise to alarm, but on investigation it was found that the subsidence was due to special circumstances connected with the foundation-stone ceremony which were not likely to recur. However, Sir William Emerson, the architect, undertook to lighten the weight of the building, and as one measure to achieve this the high raised statue of Queen Victoria by Sir George Frampton was placed in the gardens instead of the main hall. The building has settled some 8 in. only. Another difficulty was connected with quarrying the marble at Makrana, in the Jodhpur State, Rajputana. A great deal of rock debris and rubbish had to be cleared away from the quarry beds before suitable pieces of marble could be obtained. The scarcity of water necessitated the sinking of a well through 137 ft. of hard stratified rock to obtain the water necessary for the workyards. Plague, famine, and influenza affected the labour supply, as also did the war, many labourers being attracted to the munition factories. The marble used for the Victoria Hall is better than that used for the Taj Mahal at Agra in the 17th century, taken from the same quarries, being whiter and more brilliant. In no part of the exterior facing is the marble less than 3 in. in thickness. The 3-in. slabs are securely bonded into the solid brickwork backing, forming, constructively speaking, a homogeneous mass with it. The style of architecture is English Renaissance, with Indo-Sarajenic features. The building is 330 ft. long and 258 ft. wide, the memorial diameter, has been constructed without the usual temporary centring or support

—a suggestion of Mr. Vincent J. Esch, the superintending architect. When the building is opened by the Prince of Wales it will have taken twenty years to realise this splendid conception of Lord Curzon, foreshadowed in a public speech shortly after the death of Queen Victoria. It is to contain a museum of Indian history, and will be surrounded by beautiful gardens.

We should not have thought that it was now possible to raise a new point upon the original Increase of Rent Act, 1915, after the litigation there has been around this emergency statute. Yet this has been done in the recent case of "Beavis v. Carman" in the High Court. Section I. (3) of the Act provides, for the protection of tenants, that there shall be no ejection of a tenant from a house to which the Act applies so long as the tenant continues to pay his rent and perform the other conditions of the tenancy. Here the plaintiff sued for possession of a house at Dalston within the Act. The quarterly tenancy had been ended by the landlord's notice to quit at Christmas, and also by reason of the tenant's non-payment of rent due that quarter. The writ was issued on February 3, 1920, and on February 8 the defendant tendered the rent due to plaintiff's agent, who refused to take it. The Master had given leave to defend, and plaintiff appealed against this to the High Court. Mr. Justice A. T. Lawrence now said that this was a new point under the Act, and not an easy one. The defendant contended that she had never paid the Christmas rent until February 8, the half-quarter, and after she had settled the income tax and got receipt to send landlord. But the judge held that there had been no proof of any custom or agreement as to this. He ruled that the protection of the Act only applied when and while the rent was paid as due. So in this case the landlord had a right to an order for possession when the writ was issued, as the tenant had failed to comply with the Act. Nor could he now reinstate the tenant as if she had paid the rent when due. There must be judgment for the plaintiff landlord, with costs.

At the meeting of the Rochdale Town Council on Thursday, April 1, Councillor

H. Shawcross, chairman of the Housing Committee, said that an agreement had been come to in regard to the erection of houses for the corporation which reflected to the credit of all concerned. In Manchester, Bolton, and other places the authorities had had to go outside for tenders. Over 600 houses of various types had been allocated to Rochdale contractors through the Master Builders' Association, who had agreed to erect 500 houses this year. The price of the houses was about £870 for the living-room type and £950 for the parlour type. This was considerably less than the prices first submitted, because there had been some rather drastic cutting out of things by the architect and the Housing Commissioner's representatives. There was, however, a shortage of bricksetters for house-building. The reason for that was that the men were being taken for work outside the borough, where they were being given a bonus of £1 a week on buildings for industrial purposes. Unless very drastic measures were taken on this matter, Rochdale would not get 100 houses this year. They had no control over men working outside the borough, but in the borough they were declining to sanction the erection of buildings except houses. This is becoming a matter of pressing importance to Lancashire. The Town Clerk of Manchester has convened a conference for yesterday to see whether any concerted action can be taken to stop the payment of bonuses.

The signboard of the Royal Oak, Bettws-y-Coed—now in the market—is not the only one painted by a famous artist. The sign of a tavern called "The Pilgrim" is another on which, as the *Manchester Guardian* reminds us, two Royal Academicians collaborated, Frith painting one side and Augustus Egg the other. "We fully expected," writes Frith, "that our pilgrim would have been allowed to take the place always allotted to signs at inns, but, whether from respect for his calling or for the artistic merit with which he was invested, he was taken inside and relegated to the bar." There used to be a sign over an inn at Epsom, bearing the signature "T. L., Greek St.," to which an amusing story is attached. It was the work of George Harlow, an artist fairly

well known in the early nineteenth century who, having a grievance against Sir Thomas Lawrence, painted a clever imitation of the style of the President of the Royal Academy, and after affixing the initials and address of that august personage, presented it to an innkeeper in payment of his bill. Shortly after hearing of this atrocity Lawrence met the sign-painter in Portland Place, and fumed at him: "If this were not a long street, sir, I would have kicked you from one end of it to the other." "Would you?" said Harlow; "then I'm remarkably glad it's so long."

In order to recognise the many years of useful work devoted by Mr. George Eaton Hart to the printing industry, the Committee of St. Clements Press Pension Fund have decided to establish the George Eaton Hart Pension in connection with the Printers' Pension Corporation. With this end in view, a dinner is to be held on April 23 at the Connaught Rooms, and it is hoped to have the support of the leading master printers of London, as it will be an opportunity for them to show their appreciation of a life's work in the interest of printing. The chair will be taken by Lord Burnham, supported by Lord Riddell and other leading members of the craft. Mr. George Eaton Hart served on the Technical Committee of the Newspaper Society in 1894 on various questions arising out of the daily newspaper scales of the L.S.C. Later, with the same committee, he arranged the 'first scale' with the L.S.C. and the Newspaper Proprietors for working the linotype machine. He is a member of Council and President (1906) of the London Master Printers' Association, and also member and chairman of several committees. He was one of the first members of committee, and afterwards Vice-President of the Linotype Users' Association of Great Britain, which arranged the scales for working linotypes in the provinces, besides adjusting many disputes in London and various parts of the country. He was co-opted as a member of the Newspaper Proprietors' Association Technical Committee from its commencement until 1917, and for several years chairman, to which committee all labour questions in connection with the London daily and weekly newspapers were referred for settlement. He is a member of St. Bride Technical School Committee, and chairman (1917 and 1918), member of the Advisory Committee of the School of Arts and Crafts, Southampton Row, also of the Borough Polytechnic Printing School, also lecturer to the various technical schools. He is also a member of the City Labour Exchange Committee, chairman of the National Advisory Committee for the Printing Trade for the employment of wounded soldiers and sailors, and chairman of the London Local Advisory Committee for employment of wounded soldiers. In conjunction with the L.C.C. established fifteen years ago the first evening classes,

specially arranged for printers' boys, which are still carried on at Wild Street School, Drury Lane, and to which many boys have reason to be grateful for an improved education.

THE INTERNATIONAL BUILDING TRADES EXHIBITION.

The International Building Trades Exhibition at Olympia opens to-morrow, and will, we trust, bring good results to all concerned. We continue from last week our description of the principal exhibits.

Conferences and other meetings are organised by the Society of Architects at the exhibition, as follows:—Saturday, April 10: Opening day. The Architects' Club at the Princes Rooms, open to all architects and their friends. Light refreshments at tariff charges. Tuesday, April 13: Conference in the small hall, over the main entrance, 5.30 p.m. Wednesday, April 14: Architects' Club open. Thursday, April 15: Luncheon to members of the Council by invitation of the president. Architects' Club open. Council meeting in the small Conference Hall, 4 p.m., following an ordinary meeting at 5.30 p.m., for routine business, and an extraordinary general meeting to confirm the special resolutions passed on March 25 to alter the articles of association. Public meeting at 6 p.m., when Sir Charles T. Ruthen, O.B.E., F.R.I.B.A., senior vice-president, will open a discussion on "The National Housing Policy, with Special Reference to the Cause of the Increased Cost of Building." Friday, April 16: Public meeting in the small Conference Hall at 5.30 p.m. for the discussion of a subject introduced by the Electrical Development Association. Architects' Club open. Saturday, April 17: Architects' Club open. Monday, April 19: Public meeting in the small Conference Hall at 5.30 p.m., for the discussion of a subject introduced by the Federation of Building Trade Operatives. Architects' Club open. Tuesday, April 20: Public meeting in the small Conference Hall at 5.30 p.m., when representatives of the National Federation of Building Trades Employers will explain the new National Building Code. Architects' Club open. Wednesday, April 21: Public meeting in the small Conference Hall at 5.30 p.m., when representatives of the Architects' and Surveyors' Assistants' Professional Union will explain the scope and objects of their organisation. Architects' Club open. Thursday, April 22: Public luncheon at the Pillar Hall, 12.30 p.m., when representatives of Government Departments, kindred institutions, public bodies, and the building industry will be the guests of the Society. Tickets, price 12s. 6d. each, not including wines, may be obtained from the society at 28, Bedford Square, W.C.1, and, during the exhibition, at the Architects' Club, Olympia. The luncheon is open to architects and their friends, including ladies, and also members of the building industry and of the general public. Architects' Club open. Friday, April 23: Public meeting in the small Conference Hall, at 5.30 p.m., when representatives of the British Gas Association will open a discussion—"Gas Heating in Relation to Economy in Building." Architects' Club open. Saturday, April 24: Closing day. Architects' Club open. All the public conferences are open to anyone interested in the subject to be discussed. The council luncheon on April 15 is a

private one given by the president. Tickets for the public luncheon in the Pillar Hall on April 22 are 12s. 6d. each, not including wines, and are available for architects and their friends, including ladies, and also for members of the public.

One of the most interesting novelties is that shown by the Channello Construction Co., of 8, Warwick Court, Gray's Inn, W.C.1, at Stand 111, Row F, which has been evolved by a group of architects and engineers well versed in their subject, whose aim has been to produce a construction which has been found inexpensive, effective, and rapid, and, while capable of mass production, is yet applicable to isolated structures. A standard concrete block for walls, floors and roof has all four edges grooved to ensure good joints. The wide flanges provide ample surface for making vertical joints—a point where many slab systems are decidedly weak—and also assist considerably in accurate laying. The blocks are at present being made in two sizes—24 in. by 12 in. for 11-in. walls, and 18 in. by 9 in. for 9-in. walls, under pressure on special machines—one a hand machine for small jobs and a power-driven mass production machine for big work. The blocks are absolutely accurate in size and shape and exceptionally well finished. The process of manufacture allows the blocks to be made of the minimum thickness compatible with strength and stability—i.e., 2 in. Whilst it is possible to reduce the thickness further, it is desirable to avoid any biscuit effects which may be produced by thinner walls. The company are prepared not only to undertake direct building contracts, but to lend or sell machines which have a capacity of 420 blocks per eight-hour day per machine. Walls are constructed providing a continuous cavity wall. The outside slabs are made of ordinary ballast concrete, cement, sand and stone. The outside surface may be left plain or may be very effectively moulded to represent stone of different designs. The inside blocks are of clinker concrete with ballast concrete flanges. This arrangement provides a continuous ballast concrete column down the interior of the wall, making for strength and weight-carrying capacity, and also for dryness by ensuring retention of heat in the house. The corners of the wall are arranged so as to give excellent strength and stability. The question has been asked whether the cavity is continuous round corners. The wooden models show that this is so. Openings are effectively dealt with, a special architrave block being manufactured for the purpose costing about the same—i.e., 6d. or 7d. each. Lintels are of reinforced concrete. The ground floor may be made of blocks laid on slabs. This method provides for ventilation and eliminates damp. Selected floor coverings can be applied when and where necessary. First floors are treated as will be seen. Standard slabs are used for the upper surface and slabs for the ceiling of room below, the whole being carried on rolled steel joints of standard section. The cost of this method of flooring is less than for a floor cast *in situ*, due to ease and speed of erection. The beams are simply laid in position as the wall is built, and the slabs are grouted in with cement mortar. With a special wall block manufactured on the same machine, standard timber floors could be accommodated. The roof is of similar construction to the floor, but lighter. The slabs are clinker concrete laid on steel beams. The surface of the roof is covered with slates nailed to fillets. The slates

are used because a concrete roof offers difficulties to waterproofing, in addition to its appearance being not all that could be desired. Both pitched and flat roofs may be used. With flat roofs the slabs will be ballast concrete, as in first floors. Timber-framed roofs can be used, but of course the fire-resisting qualities of the structure would suffer in consequence. A "Channello" structure is absolutely fire-resisting. A flue construction in blocks provides a hot air circulating system for heating the whole house.

The Siegwart Fireproof Floor Company, Ltd., of 231, Strand, W.C.2, show their excellent floors, British throughout, capable of very speedy erection, with a minimum of steelwork, and permanent and fireproof. The system avoids the use of timber, and has been largely used in the construction of munition buildings and other structures where stability and economy were of importance.

At Stand 125, Row G, Messrs. R. Gay and Co., Ltd., the well-known paint and enamel specialists, of the Langthorne Works, Stratford Market, E.15; and Walter House, Bedford Street, W.C.2, show a novel and remarkably interesting panel display, by which three painted panels, harmonising in tone, appear in frames at stated intervals. The remainder of the stand is devoted to a comprehensive exhibit of models, etc.

At 9a, Row B, the British Roofing Company, the proprietor of which is Mr. A. C. Jameson Green, Premier House, Southampton Row, W.C.1, show their well-known Alligator Asbestos slates, wall and ceiling sheets. Various methods of laying the slates can be adopted, but that recommended for economy, of which the method is shown, is worth the particular attention of users, who should also note the small roof of Alligator Asbestos corrugated sheets on view, which is an ideal roof for factory construction, being acid and chemical proof, and fire and rot-proof.

At Stand 22, Row B, in the Gallery, the Cuirass Products, Limited, 39, Victoria Street, S.W.1, have some specimens of their cheap and wonderfully lasting Rust paint, which costs a halfpenny per square foot; never blisters or cracks, cannot oxidise, and unaffected by climate or weather. Also their Wood oil, which does not require frequent renewal, and improves the wood. There are also to be seen their Liquid Roofings, which, applied with a brush, cold, waterproof leaky felts, rusty iron, zinc, concrete, and damp walls, at a fractional cost.

The Wouldham Cement Company's famous brands of Portland cement are to be seen at Stand 103, Row F, including samples thereof. The various stages of the manufacture of cement are shown, and briquettes and cubes of various ages and mixtures for testing crushing strain, together with aggregates of various descriptions both suitable and unsuitable for mixing with Portland cement.

The Mayor of Eastbourne, on behalf of the members of the town council and officials, has presented the borough surveyor (Lieut.-Colonel A. E. Prescott, D.S.O.) with a silver teapot, sugar basin and tongs, and milk jug, on the occasion of his departure to take up the county surveyorship of Hertfordshire.

The Bishop of Nyasaland dedicated on Easter Day a war memorial of exceptional character which has been placed in the Church of St. John-the-Divine, Kennington, in memory of over 300 men who laid down their lives in the war. It is affixed to the south wall of the church, and the centre-piece consists of a life-sized figure of Christ on the Cross, modelled and carved by Mr. N. Hitch. The architect was Mr. Burke Downing, F.R.I.B.A., of Westminster.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

As briefly reported in our last issue, the Royal Institute of British Architects met at 9, Conduit Street on Monday evening, March 29. Mr. John W. Simpson (President) was in the chair. The Institute met first in special general meeting, where the principal business was to pass the resolution: "That, subject to his Majesty's gracious sanction, the Royal Gold Medal for the Promotion of Architecture this year be presented to Mr. Charles Louia Girault, Membre de L'Institut de France (hon. corresponding Member of this Institute), in recognition of the merit of his executed work." This resolution was moved by the President, seconded by the hon. sec., and unanimously agreed to.

The meeting then resolved itself into an ordinary general meeting, where the principal business was to hear Mr. Delissa Joseph read a paper on

HIGHER BUILDINGS FOR LONDON.

Mr. Joseph said that an article in the Estate Market column of the *Times* of January 1 last, suggesting that the demand for central property might lead to the sanctioning of a type of building taller than any now existing in London, had led to a correspondence in which he had suggested that buildings might be permitted in suitable situations as much as 200 ft. high; while Mr. Andrew Taylor, then Vice-Chairman of the L.C.C., had opposed the making of any change whatever. While this correspondence was going on Sir Martin Conway had delivered an address before the London Society, saying that, if he had his way, he would knock London down, acres at a time, leaving large open spaces and erecting buildings thirty or forty storeys in height. He (Mr. Joseph) had been surprised that such a scheme should have been laid without protest before a society whose main purpose was stated to be the beautification of London, and had protested against it; nevertheless, the impression: had got about that both Sir Martin Conway and himself were advocating "skyscrapers for London." The Press was emphatically against the idea—the *Star* had spoken of a "City of beetling heights, towers of Babel, and great cliffs of concrete"—and his suggestion of higher buildings had been greatly prejudiced by Sir Martin Conway's extreme proposals. An objection to Sir Martin Conway's scheme, quite apart from the question of height, was that it involved a process of destruction which would further involve a process of confiscation, or else lead to a long and tedious process of realisation. But one sympathised with Sir Martin Conway's desire to make London a town which people could live in, and not one which they must live outside, and agreed that we should try to get rid of the hideous crowds at the beginning and end of the eight-hour day. As for the labour-saving apparatus and the simplification of domestic life outlined by Sir Martin Conway, these could be equally applied to buildings of moderate height as to skyscrapers. Other eminent people had made suggestions; among these, Mr. John Hopkins, M.P., had proposed that in a typical area of fifty acres ten acres should be covered with high buildings and the remainder of the site laid out as playgrounds. This was obviously impracticable as a financial transaction, because it would involve the confiscation of forty acres of private property.

Of his own scheme, Mr. Joseph said that the present limit of height was 80 ft. and two storeys in the roof; whatever might be the outlook of a building, no greater height could be allowed. He advocated that buildings 200 ft. high should be permitted facing parks, the river, and large open spaces, and that in the case of thoroughfares beyond 80 ft. wide buildings might be carried up to a height equalling the width of the thoroughfare. A 200 ft. building would represent a height about equal to that of the monument; it would have sixteen or seventeen storeys above the street level, but would be a modest structure compared with the buildings of thirty-six storeys advocated by Sir Martin Conway, or with American skyscrapers rising, in the case of the Woolworth building, to fifty-seven storeys. He did not advocate costly clearances; what he asked for was that the Building Act should be made

more elastic, so that owners of property in suitable situations might be enabled to develop their land to an adequate height when leases fell in, thus gradually relieving the pressure of accommodation in London. The largely increased rateable value which would result could be applied in the widening of congested thoroughfares. His scheme had central London chiefly in view, but there was no reason why it should not be applied to the existing main routes leading out of London, or to the numerous commons and open spaces within easy reach of the centre. In London itself there were numerous opportunities. For example, Portland Place was 125 ft. wide, the northern end of City Road 130 ft., the widest part of Euston Road 160 ft., Marylebone Road for part of its length 120 ft., Whitechapel High Street about 100 ft., Mile End Road 145 ft., and Clapham Road about 130 ft.

Sir Martin Conway moved a vote of thanks to Mr. Joseph. Speaking of the subject of the paper he said that he had gone to New York with a prejudice against skyscrapers, but that it had only taken him one day to be converted. In this matter of tall buildings you had only to be in them, and you did not want to live in a short building again. The higher you went up in such buildings the higher were the rents, because people preferred to live high when they got the chance. So doing, they got out of noise, dust, and a good deal of fog. They left an enormous number of microbes down below, and got fresh air, more light and extensive views. Such buildings had been nicknamed skyscrapers, and there was a prejudice against them. But what was a skyscraper? Supposing you put flats into the Victoria Tower and a lift up one of the turrets, it would be a skyscraper, but would it be any the worse for that? What he was after was keeping London inside its present circumference. London, he was told, was going to have ten million inhabitants. Where were these to be put? If into garden suburbs, it would take a day's journey to get from London into the country, which would be a great annoyance. Another thing was that he understood that twenty old city churches were likely shortly to be knocked down, and the sites sold for office buildings. Of course, with the value of land becoming so tremendous, and the population of the city drifting out so that there was nobody to go to church, there was a very strong argument for knocking down the churches. But if people were housed in really high buildings, it would relieve the pressure so that it would be possible to preserve the ancient monuments. He, personally, did not care whether buildings were 200 ft. high, 500 ft. high, or 5,000 ft. high; but he supposed there were practical people who knew the height up to which it was worth while to build—the height where you got the maximum income for the minimum of relative cost. If we build a large enough building to hold a large enough number of people, we could have some kind of co-operative activity within it, so that in that one building we could have co-operative stores, clubs, schools, anything. The whole business and pleasure of a large community could most cheaply be carried on together in a single large building. There was probably some number—5,000 or 10,000, perhaps—which with minimum expenditure and maximum efficiency, could be housed together in one building of the right height, in the heart of London and surrounded by a considerable amount of open space. By that method of housing we could get on to the soil of London a very much larger population than it could carry at the present time. The people would be better housed and the difficulty of transit considerably reduced.

DISCUSSION.

Mr. Andrew Taylor, L.C.C., said it was the duty of everyone who loved London to consider this problem very carefully. He had visited New York three or four dozen times, and had before him now very strongly a vision of some of the churches and spires of that city. Trinity Church, at the head of Wall Street, had one of the most beautiful spires in New York, flanked by tall buildings, rising, some of them, 100 ft. above the spire and completely knocking it out. Another case was that of the church and spire

in Madison Square. Supposing we had such buildings in the City of London, they would spoil the present view from the river, the beauty of which depended on a certain symmetry and proportion in the buildings in the city, punctuated with the towers and spires of Sir Christopher Wren's churches and dominated by the dome of St. Paul's. If such a building were used exclusively for office purposes it would not relieve the traffic problem, but would greatly accentuate it; for where there were 100 clerks now, there would then perhaps be 1,000. The whole argument of those who advocated tall buildings was that these were to be both office and residential. But if we had children living sixteen or seventeen storeys up, how were they to get out to play? Further, a man could not have his little bit of ground in which to grow a few vegetables and flowers. There would be elevators, of course, but these might get out of order, and imagine an old lady or young children climbing 400 steps! Supposing a fire took place in the lower storeys, the elevator shafts and staircases would form vents and flues for drawing up asphyxiating smoke, and the only way to get out would be by outside iron staircases. Take a dark winter's night, with the steps covered with ice and snow, and imagine getting old ladies or young children down those steps. The loss of life would be appalling. The London Fire Brigade could not attack fires in the upper storeys of such buildings; they had the longest ladder in the world, but it was not long enough, and there was not pressure sufficient to throw the water as high as would be needed. Instead of erecting very high buildings, we should make full use of the powers we had to-day. The present Act allowed buildings of eight or nine storeys, but how many London houses were up to that height? In the whole district of Bloomsbury they would find street after street with only here and there a building of more than four or five storeys. If they made full use of the powers they already had they would get double the accommodation in Bloomsbury, and, therefore, double the ratable value. Until such use was made of existing powers, it was unjustifiable to ask for more.

Mr. J. Hopkins, M.P., said he agreed very heartily with Mr. Joseph's views and recommendations. But his own suggestion with regard to dealing with the fifty acres slum area in St. Pancras had been a little misinterpreted. When suggesting that ten acres should be rebuilt and forty acres left as open space he did not mean that the forty acres should be confiscated. His proposal was to purchase the fifty acres and utilise only ten acres for building, but putting the buildings so high that they would accommodate all, and more than all, the people who now lived on the fifty acres in one and two storey houses. He was afraid this idea would not be carried out. He quite understood why workmen objected to the lifeless barracks that had been built for them in London; he would hate to live on the sixth storey if he had to walk up and down the stairs. But such buildings need not be ugly, and they might be made comfortable. You could not have central heating, continuous hot-water supply, and other things that the housewife wanted in houses built eight to the acre; but you could have them, and have them cheaply, in high buildings. As to some of the objections which had been raised, it was possible to have electric lifts worked with current from different sources, so that if one source broke down others remained; and there was such a thing as an electric pump and tanks on the top of the highest building in the world to put out fires.

Mr. R. Granville Smith said the effect of adopting the lecturer's proposals would be to wall in all the open spaces of London with high buildings, preventing the fresh air from getting to the streets around. If we were to have skyscrapers, the way to go to work would be to take London by fifty acres at a time, throw down the present buildings, and erect the new ones, leaving open spaces between. But that was obviously not practical. There might be a few workmen who wanted central heating, hot-water contrivances, and so on; but, generally speaking,

what they and their wives and children cared for was a little plot of ground about the house where they could grow their own cabbages and potatoes.

Sir Solomon J. Solomon, R.A., said that, as a painter, he thought it would be a great pity to rob London of any part of its small share of sunlight. (Hear, hear.) Any raising of the general level of skyline would have a depressing effect, but some opportunities for higher buildings were afforded by the parks. He had tried to visualise what Park Lane would look like with the skyline raised, and he thought we could not go beyond twelve storeys without a depressing effect; but there were positions where one could have a tall building which would give an effect like a cathedral. It would have to be on the south side of the park, so that its shadows fell on the park and not on surrounding buildings; or, if on the north side of the park, a clearance would have to be made. He thought there was an opportunity beside the railways. The line running from Broad Street to Ealing was in many places fifty to one hundred yards across. On the south side fairly high buildings might be erected, which would throw their shadows on the line, and whose inhabitants would be within easy reach of the railway station. Another site for tall houses was on the south side of the Thames, where the shadows would fall on the water. In this case there might be a fleet of motor-boats taking the people between work and home, thus making use of the river and relieving the traffic in the streets.

Professor Sir Beresford Pite said that an important matter to which Mr. Joseph had not referred was the limitation which prevented certain buildings from having their top storey more than 60 ft. above the ground. That was where the shoe pinched. This limit ought to be removed. But no argument had been advanced that evening for raising the general limit of height beyond 80 or 100 ft. It was nonsense to talk of raising the front of a building without realising that you were raising the sides and back. If a building 200 ft. high were put up facing the park, a wide street, or the river, the back of that building would be the same height as the front, and should on Mr. Joseph's own showing, be 200 ft. away from the nearest building. It was all very well to talk about top floors, thirty storeys up, but that thirtieth storey had twenty-nine storeys beneath it. Were we to build for the comfort and delight of the luxury classes, who could pay the high rents for the top floors of the high buildings, and ignore the lower classes—who would be lower classes in an abominable literal sense of the term? Should we create a London for mountaineers and ignore the cave dwellers below them? Would these tall buildings have external light alone? How wide across would be the inner courtyards? What rooms would look into them—dwelling-rooms, kitchens, sculleries, with drains and manholes at the bottom? The idea was pestilential; retrograde was not the word for it. John Burns had once said to him that the statistics of pulmonary disease in Paris were perfectly alarming in the districts in which the buildings were high as compared with the districts in the outskirts, in which the buildings were low.

Professor Adshead said it was "piffle" to talk of high buildings settling the housing question. We lived in days when the question was not whether high buildings could take the place of an extension of the suburbs, but whether they could take the place of satellite towns. Had Mr. Andrew Taylor realised that the present regulations as to height meant in effect 80 ft., with two storeys above of jerry-building?

Mr. Leverton said it was not the fact, as stated by Mr. Joseph, that Sir Martin Conway's proposal had been laid without protest before the London Society; and one of the speakers in opposition had pointed out that surrounding New York and other American cities you saw villas rising out of grass plots, and that this was the American ideal.

The Chairman said that the only way to do away with the housing difficulty and the traffic problem at the same time was to go higher; but so doing brought the horrible danger of fire. There was no such thing as

a fireproof building. All Europe appeared to be of the same opinion as we were on the subject of high buildings. In Paris the maximum height was 65 ft., in Berlin 72 ft., Vienna 82 ft., and Rome 78 ft. In America, Boston did not allow warehouses and stores to exceed 100 ft., and no building whatever must exceed 125 ft. In Washington the maximum height was 130 ft., and for non-fireproof buildings 75 ft. In Chicago the corresponding figures were 260 ft. and 100 ft. In Toronto the maximum height was 130 ft., and in Montreal 120 ft. In Cincinnati there was no restriction. In New York the limit differed in various parts of the city. Reverting to the fire danger, and comparing the figures for New York and London, the fire brigades of these two cities served about an equal population. London's fire brigade numbered 1,254 men, New York's 5,194. London's fire brigade cost £300,000 a year, New York's £1,850,000. In 1911 the London Fire Brigade attended 3,600 fires, and the damage done was about £500,000, while for New York the figures were 14,500 fires, and £1,750,000 damage. The best way to deal with London's difficulty was that suggested by Mr. Taylor: make use of powers under the present Building Act.

The vote of thanks was unanimously accorded, and Mr. Joseph, having briefly thanked the meeting, the proceedings terminated.

STATUES, MEMORIALS, ETC.

VICTORIA AND ALBERT MUSEUM WAR MEMORIAL.—A memorial tablet in honour of members of the Museum staff who died on active service during the war has just been completed by Mr. Eric Gill. Carved in a single slab of Hopton Wood stone, 5 ft. high, the tablet is of a simple architectural form. The lunette-shaped top contains a branch of laurel in low relief, and below, in incised lettering, with the severity and beauty of design which characterises Mr. Gill's work, is an inscription in red: "In honour of those who gave their lives for their country, serving the King by land and sea in the Great War, MCMXIV-MCMXVIII," followed by the names of the sixteen men who made the great sacrifice. The memorial will be placed temporarily on exhibition in the Central Hall of the Museum during the Easter holidays, and will be built later into its final position.

PROFESSIONAL AND TRADE SOCIETIES.

ARCHITECTURAL ASSOCIATION.—The new club rooms will be open to all members from April 12 onwards, from 10 a.m. to 10 p.m., including Saturdays. Luncheon will be served at 2s., dinner at 2s. 6d., and also tea. An exhibition of students' drawings, specially sent from Massachusetts Institute of Technology, Boston, and L'Ecole Nationale des Beaux Arts, Paris, together with a selection of A.A. students' work, will be on view from April 12 to 20, inclusive, from 10 a.m. to 10 p.m. The conversation and dance, postponed from March 26, will be held on April 20. Tickets already issued will be available for the new date.

The Red Lion Hotel, Bedford, an historic hostelry in the centre of the town, which has only had two tenants in half a century, and sixty years ago was the headquarters of the Duke of Manchester's Light Horse, was sold at a public auction last week to Trust Houses (Limited) for £14,250.

The Middlesex County Council have filled the vacancy of county engineer and surveyor caused through the death of Mr. H. T. Wakelam by appointing, out of forty-nine applications, Mr. Alfred Dryland, M.Inst.C.E., county surveyor of Surrey, at a salary of £1,800, rising in two years to £2,000. The other selected candidates were Mr. R. Hampton Clucas, borough surveyor, Hammersmith, and Mr. W. J. Hadfield, city surveyor, Sheffield.

Sir James Carmichael has been obliged, under medical advice, to take three months' complete rest. Sir James has felt the severe strain which his work as Director-General of Housing has entailed, and he will not be in attendance at the Ministry of Health for three months. The Housing Department has accepted tenders for 90,000 houses, and it is therefore possible for Sir James to take the temporary respite which doctor's orders have rendered imperative.



MEMORIAL WINDOW, CAPUTTE CHURCH, PERTHSHIRE, TO MRS. ALEXANDER LYLE.
Designed by



WAR MEMORIAL, HOLYBOURNE CHURCH, ALTON, HANTS.
Mr. MAURICE B. ADAMS, F.R.I.B.A., Architect.

974

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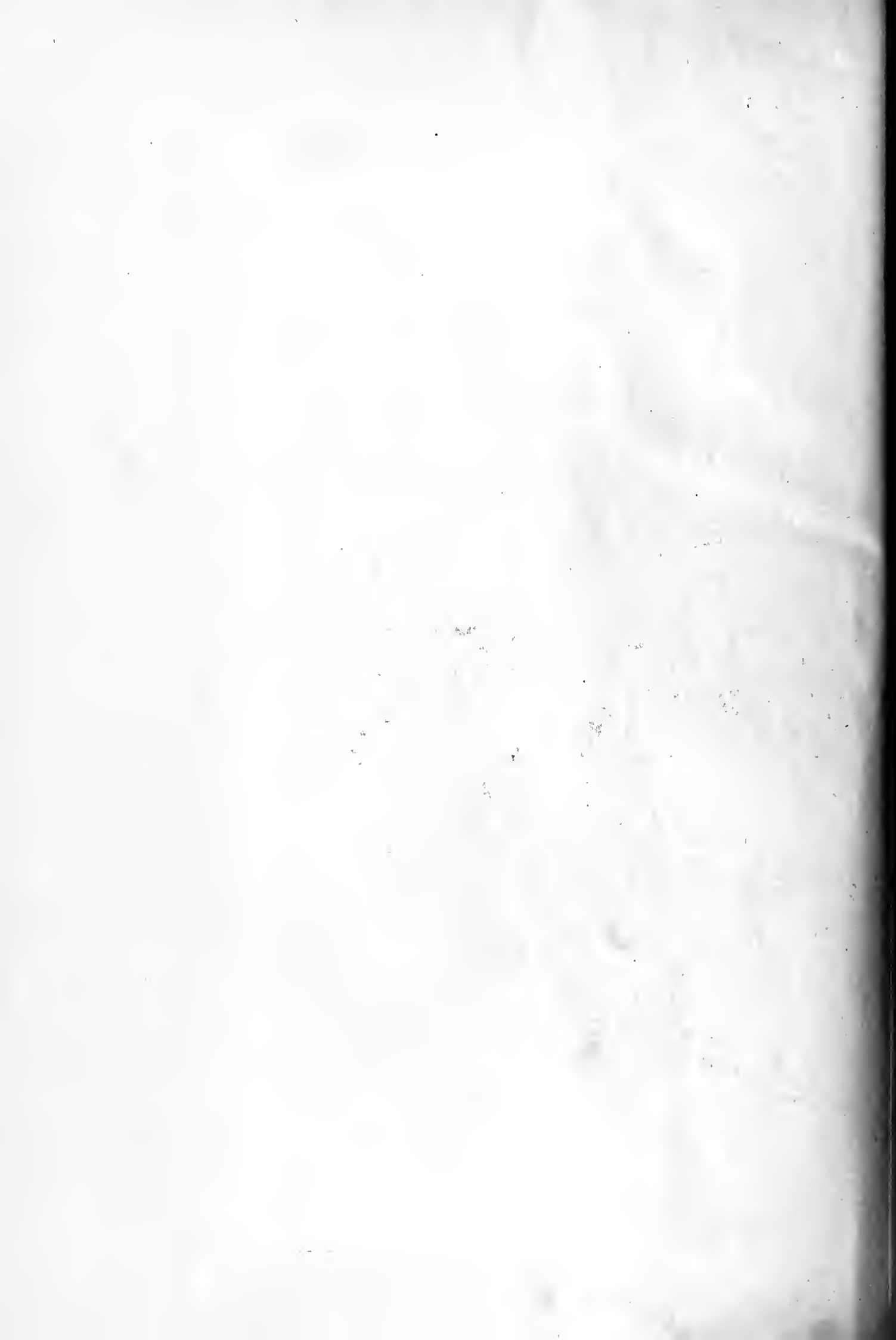


THE LIBRARY, AUSTIN
Messrs. A. M. MACKENZIE, LL.D., A.R.S.

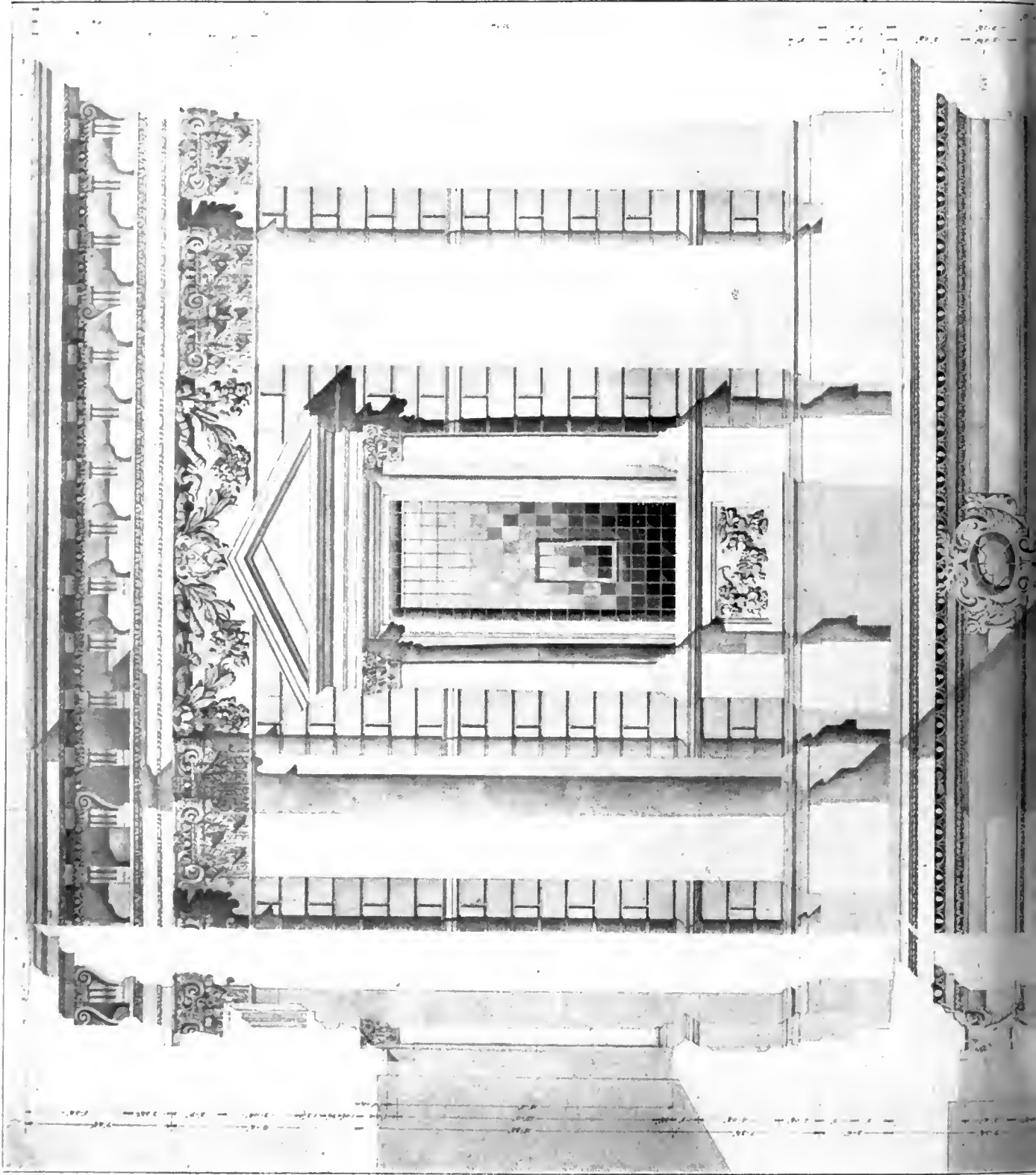
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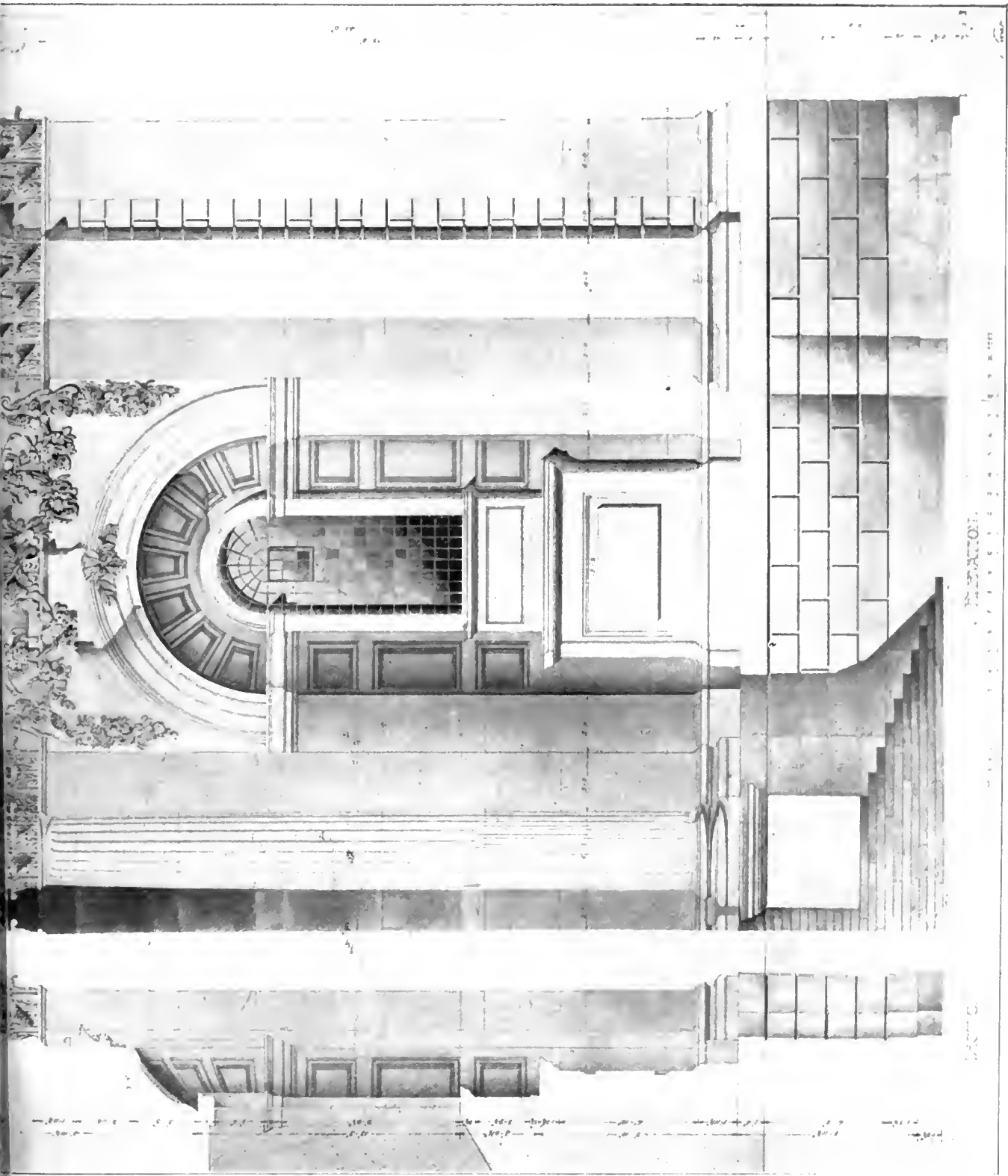


HOUSE, LONDON, W.C.
A. G. R. MACKENZIE, F.F.R.I.B.A., Architects.



279-282.





LOWER PART, WEST TOWERS, ST. PAUL'S CATHEDRAL.
R.I.B.A. Silver Medal Prize Drawings by Mr. ARTHUR F. E. POLEY.



COMPETITIONS.

THE SOCIETY OF ARCHITECTS VICTORY SCHOLARSHIP COMPETITION.—The Victory Scholarship "of the value of £100, and carrying with it the gold medal of the Society, is open for competition to any persons not exceeding thirty-five years of age, who are British subjects. 1. The jury of the Beaux Arts Committee, Messrs. Arthur Davis, F.R.I.B.A., Robert Atkinson, F.R.I.B.A., and A. E. Richardson, F.R.I.B.A., will be the assessors, and their decision will be final. 2. The competition is open to all British subjects, male and female, under the age of thirty-five, and will consist of designs in architectural composition. 3. The competition is divided into two parts as follows:— (a) The first competition consisting of a twelve-hour sketch competition conducted *en loge* in London under supervision at a place designated by the jury, who will also set the subject. Each sketch will be officially stamped by a representative of the jury, and the sketches will be exhibited and assessed by the jury, who will designate a maximum of ten competitors eligible to enter for the second competition. (b) The second competition lasting four weeks and consisting of a design based upon a second twelve-hour sketch executed under similar conditions and regulations. The selected competitors will make and preserve a copy of their twelve-hour sketch, which will form the basis on which the final design must be carried out. The time allowed for completion is one month. Such competitors, after having produced their twelve-hour sketch, may receive the advice and criticism of their masters and fellow students, but any serious deviation from their original twelve-hour composition, or any insufficient rendering will disqualify the competitor. *The term "*en loge*" signifies that the competitors will be isolated and must produce their sketches from the given programme without reference to books or documents and without consultation. Any competitor infringing this rule will be disqualified. 4. The finished designs will be exhibited and assessed by the jury, who will award the prize to the author of the design they consider the best, subject to the standard being sufficiently high to merit the award. If, in the opinion of the jury, none of the designs reach the required standard of excellence, the award may be withheld for that year, and, in this case, the money may, at the discretion of the Council of the Society, be added to the general fund with the idea of subsequently increasing the value of the prize. If, in the opinion of the jury, two designs are of equal merit, the prize may be divided, and the medal duplicated. 5. At the end of the second and final competition each competitor's original stamped sketch will be pinned on to his finished design, and if, in the opinion of the jury, the main conception of the sketch has not been adhered to, the competitor will be disqualified. 6. The programmes will be handed to the candidates in sealed envelopes on the days appointed for the sketch competitions, and the subjects will not be disclosed before those dates. 7. Both of the twelve-hour sketches must be executed *en loge* in London, but the final design may be developed at any place convenient to each selected competitor. 8. The prize will be £100, and the winner will be at liberty to spend the money in any way he may choose, provided he satisfies the jury that it is devoted to the furthering of his education. 9. Entries close on April 10, 1920. The first *en loge* competition will be held on May 1, from 10 a.m. to 10 p.m., and the second *en loge* and final competition a month later. 12. All communications must be addressed to the secretary of the Society of Architects, 28, Bedford Square, W.C.1 where entry forms may be obtained.

CLEETHORPES PEACE MEMORIAL COMPETITION.—Members of the Society of Architects are requested not to take any part in the above-named competition without first ascertaining from the Society that the conditions have been approved by the Council.

PARIS.—After two months' deliberation, the committee of eighty-four members appointed to judge the plans submitted for the improvement of Paris has announced its decision. The prize is awarded for a plan

to improve the capital from a practical rather than from an artistic point of view; it is the joint work of MM. Joussey and Sollier, and aims at the development of Paris as an inland port. The second prize goes to the originators of another joint work.

Our Illustrations.

LOWER PART OF WEST TOWERS,
ST. PAUL'S CATHEDRAL,
R.I.B.A. SILVER MEDAL MEASURED
DRAWINGS.

The general drawing of the entire west elevation, including the dome of St. Paul's Cathedral, was reproduced from Mr. Arthur F. E. Poley's prize medal studies in *THE BUILDING NEWS* for March 5, and on the 12th ult. we published his sheet of details of the upper stages of the western towers. To-day we print a double-page showing their lower part with the beautifully executed carvings of Grinling Gibbons, the famous architectural carver.

THE LIBRARY, AUSTRALIA HOUSE,
LONDON.

The High Commissioner's room and the library were simultaneously carried out by Messrs. Wylie and Loehhead, of Glasgow. The wood throughout is entirely of black bean, a very fine Australian timber of natural dark rich colour. It was simply waxed, and no stain of any kind was used. The pillars and pilasters are of dark Calcutta marble from Australia. The proportions of the library are extremely satisfactory, and the carpet was designed by the architects to harmonise with the room. We have to-day reproduced the photograph exhibited at this year's Royal Academy. Messrs. Marshall Mackenzie, LL.D., A.R.S.A., and A. G. R. Mackenzie, F.R.I.B.A., are the architects. We gave a view of the Exhibition Hall in our number for March 5, 1920, for the same building.

MEMORIAL WINDOW, CAPUTTE
CHURCH, PERTSHIRE.

This window has been erected in memory of his wife by Mr. Alexander P. Lyle, of Glendelvine. The figures are Joan of Arc, Queen Margaret of Scotland, and St. Cecilia. There is also a fourth light of "Dorcas." They are all light windows, the figures being surrounded by whitish quarry glazing. Mr. Robert Anning Bell, A.R.A., designed and detailed the work.

WAR MEMORIAL, HOLYBOURNE
CHURCH, HAMPSHIRE.

The old parish church of Holybourne, near Alton, is in the Diocese of Winchester. The dedication of this memorial took place on March 23. The site is between two large traceried windows in the modern aisle. The monument is rather more than five feet high, and is executed in statuary marble and alabaster, with a rich green marble surround finished with a polished face. Red marble margins bisect the inscription panel, and the lettering is incised and filled in flush with grey-black mastic. The arms of the Bishop of Winchester carved on the left hand shield, finished with gold and colour, balance the device of the county of Hants on the right. The Royal Arms occupy the bigger shield at the base, also emblazoned. The accompanying photograph does not give the correct proportions of this feature, owing to the difficulty of fixing the tablet sufficiently high

in the studio at a corresponding level to its position in the church, consequently the camera could not be placed low enough to obtain a right view. The shield is much taller than appears in the plate, and is set at a tilted splay so as to show the heraldic details appropriately from its permanent situation. The cross at the apex is partly gilt like the nimbus and palm branches below, the wreath being also relieved by gilding, which looks well on the alabaster. The work has been executed from the full sizes of the architect, Mr. Maurice B. Adams, F.R.I.B.A., of London.

CHIPS.

The death is announced at Bronxville, on his sixty-second birthday, of W. T. Smedley, a prominent American artist and illustrator.

Poet: "No; the editors never burn my poems." Friend: "How is that?" Poet: "I write them on sheets of asbestos."—*Children's Newspaper*.

The Society of Architects has issued its Scale of Professional Charges, based on that issued in 1872 by the Royal Institute of British Architects, revised in 1893 and 1913 by the R.I.B.A., and adopted by the Society of Architects in 1919.

Mr. Alfred Parsons, R.A., of Luggershill, Broadway, Worcestershire, president of the Royal Water-Colour Society, who died on Jan. 16, left estate of the gross value of £18,401, with net personality £12,905. He left £200 and one year's wages each to his housekeeper, Maude Collins, and his gardener, John Green, and one year's wages to each other servant in his service at his death.

The memorial to the late Captain F. C. Selous, the famous "big game" hunter and explorer, which is to be placed in the Natural History Museum, South Kensington, is approaching completion, and will be ready for an unveiling ceremony in the early summer. The memorial, which takes the form of a bronze portrait bust and a panel depicting big game of Africa, is the work of Mr. W. R. Colton, R.A.

The death is announced of M. Laurent Marqueste, the well-known French sculptor. M. Marqueste was born at Toulouse in 1853. He was a pupil of Joulroy and won the Prix de Rome in 1871. He first exhibited at the Salon in 1874, and thereafter he executed many important works, drawn from classical themes, as well as busts of distinguished contemporaries. He fashioned "l'Art," a statue in bronze for the port of the Hôtel de Ville, Paris, and he was also responsible for the statue representing Geography in the façade of the Sorbonne.

A part of the National Portrait Gallery vacated by the War Office, was re-opened on Wednesday. Occasion has been taken to rearrange the exhibits in chronological order, so that different portraits of the same subject are shown together, and comparison is made easy. During the time the Gallery has been closed several important additions have been made, including two portraits of Lord Kitchener, one of General Gordon, and another of Lord Roberts, by G. F. Watts, presented in November, 1914.

The Assistant Postmaster-General unveiled the Post Office Savings Bank War Memorial at Kensington on March 30. The memorial, to which £1,200 has been subscribed, consists of a roll of honour in oak panelling, with the names of the 632 Savings Bank men who served during the war, a granite tablet, mounted in bronze, at the entrance to the Department, with the names inscribed of the 93 men who gave their lives, and framed photographs of the fallen. A donation of £500 has also been made to the War Seal Foundation Mansions, Fulham, for the permanently incapacitated.

There was no new development in connection with the strike of operative plumbers in Edinburgh and Leith on Tuesday. Two mass meetings of the strikers, who number about 700, were held in Picardy Place Halls. Reports were submitted stating the men were solidly behind their representatives, and, with the exception of one or two old men, there was a complete stoppage in Edinburgh and Leith. A proposal to open shops for the purpose of supplying direct labour to the public was under consideration, as was also the question of supplying labour to assist urgent schemes of building and repair work.

BONUS SYSTEM APPLICABLE TO CONSTRUCTION.

By W. C. NISBET.*

This method of payment for services, namely, a fixed hourly wage plus an additional percentage which increases as the output of individual or gang reaches or approaches some predetermined standard, was originated by Harrington Emerson in 1905 during his work for the Atchison, Topeka and Santa Fe Railroad, and was at first applied to machine shop operations. It was designed, however, for universal industrial use.

The theory of this wage system is that the payment of the regular hourly rate of the trade or craft for the locality is necessary to attract the worker and to bring him on the job, and the bonus is to reward him for doing a good day's work—for exercising fully his physical and mental powers.

Since 1907, when this wage system had become completely installed in the Santa Fe maintenance of equipment department, and up to the present, the method has been widely extended and developed. Mr. Emerson did not attempt to retain control of the new methods, but made them public for the use of all, and published his list of bonus percentages for corresponding efficiencies, with a complete description of the whole system.

Frankly speaking, the writer does not know of any instance where the standard time and bonus system has been applied to contracting as a business, but he is perfectly familiar with many instances which have a resemblance to contracting where it was successfully applied. A few of these will be given and the list made as diversified as possible.

HAND EXCAVATION ON RAILROAD CUT.

(1) Digging a short ditch through a railroad cut, with trains in operation. Hand work loading into small dump cars, hauled out by boy and mule.

Those in charge decided on the method and a number of men who could work to advantage, then set the time standard, let us say, 5 men for 13 days, or 65 man days. Then suppose the job actually took 70 man days—the efficiency attained was 65 divided by 70, or 93 per cent. This would pay a bonus to all hands, including foreman and mule driver, of 13 per cent. on their wages, as reference to the second table below will show.

	Rate per Day.	Time.	Wages.	Bonns.	Total
Foreman	5.00	14 days	70.00	9.10	79.10
Labourer	4.00	14 days	56.00	7.28	63.28
Boy	3.00	14 days	42.00	5.46	47.46

If one labourer at 4 dols. per day laid off half day, his earnings would then be 4 dols. times 12½ days, or 50 dols. in wages, with a bonus of 6.50 dols., or a total of 56.50 dols.

The bonus percentages for various efficiencies are as follows:—

Efficiency. Per cent.	Bonns. Per cent.	Efficiency. Per cent.	Bonus. Per cent.
75	1.0	90	10
76	1.6	91	11
77	2.0	92	12
78	2.4	93	13
79	2.8	94	14
80	3.3	95	15
81	3.8	96	16
82	4.3	97	17
83	5.0	98	18
84	5.5	99	19
85	6.0	100	20
86	7.0	101	21
87	7.6	102	22
88	8.4	103	23
89	9.2	105	25

SURFACING NEW RAILROAD TRACK.

2. Ballast and surface a piece of new railroad track: Suppose the grade is finished, ties placed, rails spiked and bolted and ballast dumped on the track. Gang of 14 men with a foreman comes on the job to raise and to surface to grade stakes. The standard is, let us say, .055 man hours per foot of track. At the end of a two-week period, when wages are computed, suppose the gang has actually put in 1,950 hours (15 men times 10 hours per day times 13 days), and that they have raised and com-

pletely surfaced 7 miles of track, or 36,960 ft. The standard hours to be compared to the 1,950 actual hours are then 36,960 ft. times .055 man hours per foot, or 2,031 standard hours; 2,031 divided by 1,950 gives an efficiency per cent. of 104 per cent. This pays a bonus of 24 per cent. on the wages of each individual in the gang for the pay period in question.

In this case some one may ask how is it possible to determine whether the workmanship is acceptable. Some one must pass upon the acceptability of all work done, whether on bonus or otherwise. We have standards of quality, whether written in specifications and drawn on tracings or simply implied and enforced by inspection. The labourers and gang have to be impressed that the work must be done according to the usual standards of quality. In rare instances track men have had to be impressed with this by causing them to lose their bonus, or requiring that they do the work over without a bonus.

CARPENTERS ON BRIDGE WORK.

3. Foreman and 12 bridge carpenters assigned to build new deck and install deck on new bridge. Air compressor and pneumatic equipment for boring and tapping furnished.

To illustrate the method of computing wages, suppose that the foreman got 7 dols. per day, that 13 bridge carpenters got 6 dols. per day each, that one man received 5 dols. per day to dress tools, etc., and that one man received 4 dols. per day to tend the air compressor. Assume a standard of .2 day's time for each foot of finished bridge deck, and that at the end of a pay period of 13 working days they had completed 905 feet.

The actual days of labour were, say 16 x 13, or 208; the standard days of labour were 905 ft. x .2, or 181; the efficiency was 87 per cent. (standard 181 divided by actual 208), which pays a bonus of 8 per cent. on wages.

	Wages.	Bonns.	Total.
Foreman	91.00	7.28	98.28
Bridge carpenter	52.00	4.16	56.16
Man to dress tools	65.00	5.20	70.20
Man to tend compressor	52.00	4.16	56.16

CONSTRUCT CONCRETE ARCH BRIDGE.

4. Build a small concrete arch bridge for new line of railroad. (a) Dig foundations

Suppose, on examination, here a standard is set of .25 of a man day per yard of excavation. If six men and a foreman completed the job in eight working days with a yardage of 230 yards, the computation for bonus payment would be as follows:—

Seven men for eight days equals 56 actual days and 230 yards times .25 man days per yard equals 57.5 standard days. This gives an efficiency per cent. of 103 (standard 57.5 divided by actual 56), which in turn entitles all hands to a bonus on their wages earned during the period of 23 per cent. Now, in practice this bonus per cent. and the bonus in dollars is not computed for each job separately, but rather by day periods, and to illustrate how different jobs are combined, we will suppose the gang mentioned above spends the remainder of the time in the pay period in unloading and storing sacked cement.

It is not advisable to set standards covering the work of over thirty men in a gang. When more than that are included in one efficiency standard the effect is lessened. In such cases it becomes something like a profit-sharing plan where all workers share alike in the annual profits. The possibilities in profit-sharing plans are too distant, too vague, and not directly tied in with the work of any one individual, hence their effect is not very great.

Some suggested units of production are as follows:—In excavation, cubic yards removed; in railway construction, feet of track or number of ties of rails laid; in masonry, cubic yards in place; in building construction, if concrete, feet of floor laid; if steel, tons or lineal feet in place; if wood, square or cubic feet in place.

It is understood that this method entails more clerical work than is needed where straight hourly wages are paid. However,

as by its means a reduction of 15 to 25 per cent. in labour cost is often attained, the extra cost of the clerical and other supervision is well expended. Contractors should bear in mind that this has been proved to be an excellent means of increasing output per workman in many industries, and that at a time such as the present, when greater production is essential to prosperity, every effort should be made to conduct their operations more efficiently.

Our Office Table.

A recently-published return issued by the Ministry of Health as to "tenders approved during the week" contains an item of more than ordinary interest to Worcester. The many houseless people in the city were informed that in a recent week 32 tenders were approved in London. Although the lay-out and house plans for the Northwick site are now on exhibition at the Guildhall, and are being daily examined by people in need of houses, there is no sign of "the first brick," and the Ministry's figure of "32" approved tenders has been deeply mystifying. There is an explanation, and Worcester, at any rate, is conscious that while Government returns tell of approved tenders, they do not necessarily mean houses any more than sites. No tenders have been sent up by the city authority, and even the road-making at Northwick is at a standstill. The "32" refers to tenders sent up to the Housing Commissioner some time ago by a builder or builders in touch with a well-known architect, and the suggestion was that they should be built at Northwick. Although approved by the Ministry, these tenders, with the scheme they embrace, have not been accepted by the local authority, and the houseless in Worcester still see figures, statements, and papers.

A "no rent" strike by workers occupying cottages built by the Ministry of Munitions was considered in the King's Bench Division last week, when Mr. Justice Bailhache heard the cases of the Attorney-General v. Lunn and others, which involved thirty-one informations in respect of rent claimed by the Crown as due on or before August 25 last from the tenants of cottages in the Holbrook Lane Colony at Coventry. In order to house munition workers, the site at Holbrook Lane was bought, under the Defence of the Realm Regulations, and by 1916 the Ministry of Munitions had erected 465 cottages at a cost of £75,760, or an average of £159 each. Some of the cottages consisted of three bedrooms, living-room, and scullery, and were let at 8s. 3d. per week; while others, with only two bedrooms, were let at 6s. 9d. per week. These charges were inclusive of electric light and chimney sweeping. As long as hostilities were in progress all went well, but when high wages came to an end trouble began. On March 12 last year, at a meeting of the tenants, it was resolved to form an association of tenants, and a chairman, secretary, treasurer, and committee were appointed. They contended that the cottages were not worth the rent charged, and that they were unhealthy and of flimsy structure. On April 1, 1919, a letter from the association to the Ministry demanded a reduction of 4s. per week in the rent of the cottages, and threatened that if no agreement were reached by April 5 a "no rent" strike would become operative, and on June 1 a mass meeting of tenants decided to continue the strike. Sir Alexander Stenning, ex-President of the Surveyors' Institution, and Dr. E. H. Snell, medical officer of health for Coventry, testified that the cottages were quite fit for habitation. Mr. Justice Bailhache said it might be that the cottages were inconvenient, but he could not find they were unfit for human habitation. He had lived in cottages like them. He gave judgment for the Crown against the defendants, with costs, but hoped the Crown would not be harsh in demanding the arrears in full, and would give reasonable facilities to the tenants.

The Main Drainage Committee of the London County Council reported on March 30

* Of the Emerson Engineers, New York. A statement prepared for the Committee on Methods of the Associated General Contractors.

the receipt of tenders from four firms for the supply of pipes and castings. Each tender was for identical sums, as probably many readers noticed in our list last week. Mr. E. M. Dence said the reason for this was that manufacturers had decided not to black-leg and undercut each other. It was just as reasonable for manufacturers to protect themselves in this way as it was for Labour to demand a minimum wage. (Ironical Labour cheers.) Mr. Snell said the argument just advanced was a remarkable one. Whether it was right for the manufacturers to agree together on a price depended upon whether that price was a just one or not. On a division, the tenders were rejected.

In view of the fact that the breaking up of estates has probably doubled the number of landowners in England within the past few years, it is not surprising that branches of the Central Landowners' Association are being formed all over the country. Speaking at the inaugural meeting of the revived Devonshire branch, Lord Clinton said that nobody could foresee with certainty the policy or attitude of future parties or Governments to landowners, but there were quite clear indications that capital in every form was almost certain to be seriously attacked. Land was not likely to escape attention when that happened. They had also looming before them the question of nationalisation—a policy which might affect every industry. All were matters in which landowners would be almost powerless without organisation. Organisation was essential to watch the constant changes of legislation and administrative orders.

The housing question is seriously troubling the London University authorities. Many students have to spend three hours a day travelling to and from their lodgings, and cases are quoted in which three are forced to share a bedroom. New Halls of Residence would cost about £600 a head to build, and the University has no funds to build them with, and cannot use Treasury grants for the purpose. The School of Economics, which is especially concerned, for its numbers are growing very rapidly, proposes to raise a fund for purchasing large unoccupied houses and adapting them as hostels.

Bishop Gore, in one of his addresses on the Seven Words from the Cross, delivered at a three-hour service in St. Paul's Cathedral on Good Friday, said that Art had committed a great wrong since the Renaissance. "It has turned John into a weak-looking, sentimental young man. And this John was a fisherman, the son of Thunder, a tempestuous-hearted labourer, in full vigour of limb and passion of heart. May, too, was not that swooning woman, but the royal-hearted Mary of the Magnificat, splendid in her strength, splendid as she entered into the joys, the sorrows, and the destinies of the Son of God. She stood at the foot of the Cross like the mother of a Maccabean martyr, encouraging her son to suffer."

The *Daily Mail* has decided to organise a permanent exhibition to demonstrate new methods of house construction. Subject to a suitable site being found in the immediate neighbourhood of London, firms who are devising and promoting new methods of construction will be invited to erect specimen cottages in the *Daily Mail* Ideal Village. After the buildings have been kept open for public exhibition for housing authorities and others, they will be sold by auction for immediate occupation. The exhibition will probably be open for three months, so that the buildings should be available for sale by the winter.

The operative builders of Manchester have emphatically rejected the suggestion that, in order to get on more rapidly with the erection of houses this summer, they should work one hour a day longer. The figures of the ballot will not be available till next week, but Mr. Bradshaw, the secretary of the National Federation of Building Trade Operatives, says that there is an overwhelmingly adverse vote. The men now work a 48-hour week, but next month their hours will be reduced to 44. The proposal sub-

mitted to them was that they should voluntarily work a 49-hour week. Mr. Bradshaw attributes the adverse decision to resentment at the Prime Minister's reproach that the building trade operatives were doing nothing to quicken building.

With one accord, and with perfect spontaneity, the occasion of the eightieth birthday of Sir Samuel Turner was seized upon by a host of organisations and individual citizens to do honour to a personality noted in the great and ever-growing asbestos industry of which Sir Samuel may lay claim to be the founder—at least in this country. The late Mr. Samuel Turner, Sir Samuel's father, founded the great cotton manufacturing business carried on under the title of Samuel Turner and Co., Ltd. (Clod Mills, 1855). Sir Samuel left school at the age of eleven and began the serious business of life as errand boy; the second step was as a clerk in the offices of the Merchants Company, a canal company with a depot in Rochdale; the third as an apprentice at an engineering works. There he remained until he was in his early twenties, leaving to go into his father's mill at Spotland. The firm of Turner Brothers dates from the year 1871, the original partners being the three brothers—John, Samuel, and Robert. The first patent was secured in 1871 by the now senior member of the firm, then Mr. Samuel Turner. It was for a packing made in the form of a ring from greasy cotton cloth and wire gauze, with a rubber strip in the centre, and used for the stuffing-boxes of steam engines. It was in 1878 that a forest fire in Quebec laid bare the most wonderful deposit of asbestos that has yet been discovered. After the fire had burned itself out the asbestos was seen protruding through the soil. Sir Samuel's engineering training stood him in good stead at this juncture. He at once saw the commercial value of this raw material, provided it could be spun into yarn and weaved into cloth. Being a mineral and possessing heat-resisting properties unknown in the animal and vegetable fibres, it would simply be invaluable as a packing and jointing material, and would mark a new era in the development of the steam-engine. A company was formed, and the quarries have been vigorously worked ever since.

Dame Armstrong House, High Street, Harrow, is to be demolished to make room for the School Memorial. Two hundred years ago boys came to Harrow almost straight from the nursery, and Dames' Houses were a necessity. There were originally six of them, the most famous being that which formerly stood on the site of the vicarage (in which Mrs. Annie Besant lived with her mother). Dame Armstrong House stands between the old school gates and the chapel, and, retaining its original appearance, is an interesting feature of the High Street. It was closed as a Dame House nearly a century ago, but has been used since as a residence for assistant masters. A direct descendant of Dame Armstrong is living in the town.

Captain H. R. Turner was invested by H.M. the King at Buckingham Palace on March 24 with the Military Cross, awarded him for distinguished service in the field in Mesopotamia. Volunteering in August, 1914 immediately upon the outbreak of war, he was refused by the authorities, but, determined to serve, he went to France with the 1st Convoy of the British Ambulance Committee to the French Red Cross in December as driver of the motor-ambulance presented by the firm. In July, 1915, he obtained his commission in the Royal Field Artillery, and, after training, was ordered to India, where he served with the 21st Brigade until July, 1916. Then followed Mesopotamia, where he was wounded (January 11, 1917). He returned to India, followed by a spell at home when he received his first star. In July, 1917, he went to France with the 102nd Brigade, Royal Field Artillery, and in October, 1917, was gassed, and sent to hospital in London. After recovery he was employed by the authorities on special service in Canada. During his service in Mesopotamia his name figured in General Maude's dispatches on several occasions.

LIST OF TENDERS OPEN.

COMPETITIONS.

April 17.—For designs for a Monumental War Memorial for the Borough of Whitehaven. Premium of £100 offered for the selected design, the author of which may be engaged to supervise the erection of the monument. Particulars obtainable not later than April 17 of the Borough Surveyor, Town Hall, Whitehaven.

No Date.—For designs for the general hospital for the Peterborough and District War Memorial Committee. Premiums of £200, £100, and £50, respectively, to the competitors placed first, second, and third by the assessor, Mr. Edwin T. Hall, F.R.I.B.A., of 54, Bedford Square, W.C. Particulars and conditions of Mr. Joseph Stephenson, Hon. Sec., 13, Queen Street, Peterborough. [See advt.]

BUILDINGS.

April 15.—For 20 houses of various types, together with drains and fencing, on the Wood Street and London Road site, at Chatteris, Cambs.—For the urban district council.—Tenders to W. F. Moore, clerk, Council Offices, 8, Park Street, Chatteris, Cambs.

April 16.—For erection of proposed Y.M.C.A. Red Triangle Club, Shankill Road, Belfast.—Tulloch and Fitzsimons, architects, 11, Wellington Place, Belfast.

April 16.—For erection of hall, billiard-room, and alterations to existing club premises, Gilbert Road, Belvedere, Kent.—For the Belvedere Working Men's Club and Institute.—Architect, A. H. Jennings, 7, Station Parade, Erith.—Tenders to the Building Committee, Belvedere Working Men's Club and Institute, Gilbert Road, Belvedere Kent.

April 16.—For 42 houses at Bildeston, etc., Suffolk.—For the Cosford Rural District Council.—Architect, L. Crowfoot, Long Melford, Suffolk.—Tenders to A. Newman, clerk, Hadleigh, Suffolk.

April 17.—For 40 cottages at Henfield, Sussex.—For the Housing Committee of the West Steyning Rural District Council.—F. A. Crouch, A.R.I.B.A., 47, Worcester Villas, Hove, architect.—Tenders to A. Flowers, clerk, Union Offices, Shoreham-by-Sea, Sussex.

April 17.—For 16 cottages at Lancing, Sussex.—For the Steyning West Rural District Council.—Architect, F. A. Crouch, A.R.I.B.A., 47, Worcester Villas, Hove.—Tenders to A. Flowers, clerk, Union Offices, Shoreham-by-Sea.

April 18.—For houses.—For the Tonbridge Rural District Council.—Tenders to N. R. Stowe, clerk, 23, Church Road, Tunbridge Wells.

April 19.—Cottages at Boston Spa, etc., Yorks.—For the West Riding Small Holdings Committee.—Tenders to the clerk of the County Council, County Hall, Wakefield.

April 19.—For 68 houses, in pairs.—For the Newton Abbot Rural District Council.—S. Segar, 24, Union Street, Newton Abbot, architect.

April 19.—For 54 houses to be built at the corner of Barrow Lane and Swanland Road, Hestle, Hull.—For the Hestle Urban District Council.—J. M. Dossor, F.R.I.B.A., Waterloo Chambers, Hull, architect.—Tenders to W. Coulson, clerk, Parish Hall, Hestle.

April 20.—For separate trades in connection with the erection of 34 houses, of varying designs, on the Wyther House Estate, Armley, Leeds.—For the Leeds Corporation.—Tenders to the Town Clerk's Office, Great George Street, Leeds.

April 22.—For 141 houses on the Bent Hill Estate, Prestwich, Lancs.—For the Prestwich District Council.—S. H. Morgan, A.M.I.C.E., engineer and surveyor to the council.—Town Hall, Prestwich.

April 24.—For erection of 248 houses in blocks of two and four.—For the Abersychan Urban District Council.—Architects, Kenshole and Bevan, Station Road, Bargoed.—Tenders to W. H. V. Bythway, clerk to the council, Pontypool.

April 28.—For 10 houses at North Crawley, Bucks.—For the Newport Pagnell Rural District Council.—Architect, W. B. Stonebridge, M.S.A., 26, St. John's Street, Bedford.—Tenders to C. H. Glanville, clerk, 60, High Street, Newport Pagnell.

April 30.—For 32 dwellings at Bridgnorth.—For the town council.—Tenders to J. H. Cooksey, town clerk.

May 10.—For 1,520 brick-built cottages on reinforced concrete foundation rafts already provided.—For the Tibury Urban District Council.—Architects, W. J. Wadman, M.S.A., 71, Jerningham Road, New Cross Gate, S.E.14, and F. J. Winter, M.S.A., 2, Heygate Avenue, Southend-on-Sea; and the bills of quantities by S. Gordon, Finsbury House, Blomfield Street, E.C.2.—Tenders to A. W. Buckner, clerk, 47, Dock Road, Tibury.

We understand that the Victoria and Albert Museum will be released from Government occupation at the end of this month. The departments of the Board of Education which now occupy part of the building are returning to their official quarters in Charles Street, Whitehall.

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. Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

ABERDEEN.—For brickwork, carpenter, slater, plumber, concrete, and painter work of new stables proposed to be erected at Central Park, Aberdeen. Walker and Duncan, C.E. and architects, 3, Golden Square, Aberdeen. Accepted tenders:—

Mason and brickwork, J. Shirras and Son, 24, Powis Terrace, Aberdeen; cement concrete, Clark and Chapman, 57, Charlotte Street, Aberdeen; carpenter work, R. and J. Reid, 120, Bon Accord Street, Aberdeen; slater work, Alex. Harper and Sons, 13, Summerfield Terrace, Aberdeen; plumber work, R. Malcolm, 30, Powis Terrace, Aberdeen; painter work, G. Lamb and Son, 87, Spring Garden, Aberdeen; electric light installation, Aberdeen Electrical Engineering Co., Ltd., 17, Belmont Street, Aberdeen.

BLAENAVON.—For work in connection with their housing scheme, for the Blaenavon Urban District Council, viz.:—Contract No. 1.—Construction of roads, sewers, surface water drains, footpaths, open spaces and other appurtenant works incidental thereto. Contract No. 2.—Erection and completion of 184 dwelling-houses in blocks of two and four. Thomas and Morgan and Partners, 23, Gelliwastad Road, Pontypridd, architects and engineers.

Hyhart, Broadhead and Co., Ltd., 6, Suffolk Street, London, S.W., £133,603 (provisionally accepted).

CHELTEMHAM.—For first 12 cottages at Prestbury, for the Cheltenham Rural District Council.

J. D. Bendall and Sons, £835 per house (accepted, subject to the approval of the Ministry of Health). Also, tendered: Green, Union Street, £825; E. Eager, £856; A. C. Billings and Co., £941; W. Drew, Cirencester, £945; and E. Saunders, £904. Rest of Cheltenham.

CHESTER-LE-STREET.—For bridge and roadway at Chester-le-Street, for the Chester-le-Street Urban District Council:—
Dougall and Sons, Aysgarth, £16,473 14 0 Accepted.

CIRENCESTER.—Proposed extensions to Cirencester Grammar School, R. S. Phillips, Education Architect, Shire Hall, Gloucester. Lowest tender (accepted) in each case for carrying out the work:—
Contract No. 1.—New Heating Chamber, Changing Room, etc.

Tannar, W. G., Cirencester, £465 10 0

Contract No. 2.—Superstructure

Humphreys, Ltd., London, £3,137 0 0

DENHAM PLACE, MIDDLESEX.—For 12 cottages on Denham Place Estate, for the Small Holdings Committee of the Middlesex County Council:—

Brand, Pettitt and Co., Tottenham, £12,625 0 0

Plaistowe, E., Southall, 12,150 0 0

Lacey, W., Hounslow, 12,075 0 0

Gibson and Co., Golders Green, 10,820 0 0

Hanson, A. and B., Ltd.,

Southall, 10,628 0 0

Monk, A., Lower Edmonton, 9,982 0 0

Try, W. S., Cowley, 9,763 0 0

Knight, R. and Son, Tottenham, 9,762 0 0

Lawrence, W., and Sons, Finsbury Square, E.C., 9,750 0 0

Collinson and Co., Teddington, 9,625 0 0

Dickins, W. J., Ealing, 9,567 0 0

Lovell, Y. J., and Son, Gerard's Cross, 8,918 0 0

* Accepted.

EPPING.—For 20 houses at Nazing, for the Epping Rural District Council:—

Elkins, London, £16,943 0 0

Provisionally accepted.

GOSPORT.—For 430 houses, for the Gosport Urban District Council:—

Hunt, J., and Croad, J., type A, £775 each; B, £839 each; and B4, £946 each. (Accepted subject to the approval of the Ministry of Health.)

HENSTEAD, NORFOLK.—For cottages, for the Henstead Rural District Council. Accepted tenders:—
Barrett, G., East Carleton, £805; Swainsthorpe, £806; Flordon, £805 per house. Redgrave, M., cottages at Upper Stoke, £778 2s. 2d. per cottage. Bowerman and Sons, Lowestoft, 12 houses at Porlingland, £733 4s. 8d. per cottage.

HIGHDOWN, NEAR GODALMING.—For sanatorium at Highdown, for the Metropolitan Asylums Board:—

Halliday and Greenwood, Ltd.,

London, S.W., £205,450 0 0

Parker, G., and Sons, Ltd.,

Summer Road, Peckham, 199,961 0 0

Prestige and Co., Ltd., Cambridge

Road, S.W., 199,191 0 0

Holloway Bros. (London), Ltd.,

Bridge Wharf, Grosvenor

Road, S.W., 196,996 0 0

Lawrence, Walter, and Son,

Ltd., 19, Finsbury Square,

E.C., 195,642 0 0

Chessums, Ltd., Imperial Works,

Portland Road, N.15, 186,130 0 0

* Recommended for acceptance.

HORSHAM.—For erection of cottages (second portion) of the Oakhill Housing Scheme, for the Horsham Urban District Council. Tenders recommended for acceptance:—

Rowland Bros., 18 cottages, B type, at £779; Potter, G., 10 cottages, A type, at £745; Head and Taylor, four cottages, A type, at £756.

ILFORD.—For houses, for the urban district council. Offers accepted:—

Hobbs, W. J., to erect a number of houses at Clarence Road and The Crescent, Valentine's Park Estate, at £865 and £935 each; Pettigrew, J., Seven Kings, to erect two concrete houses on Tomswood Hill, £990 each.

KINGSWOOD.—For proposed new secondary school for boys, Kingswood, near Bristol. R. S. Phillips, Education Architect, Shire Hall, Gloucester. Lowest tenders (accepted) for carrying out the work:—

Contract No. 1.—Foundations, Brickwork, etc

Jefferies, A., and Son, Oldland, £7,300 0 0

Contract No. 2.

Jefferies, A., and Son, Oldland, £9,950 0 0

LONDON.—For the erection of building containing 48 tenements, at Hercules Road, S.E., for the City Corporation:—

Lawrence, W., and Sons, £68,468 0 0

Accepted.

MITCHAM.—For repairs to stores depot, Lower Green, for the Mitcham Urban District Council:—

Hann, H., Mitcham, £426 2 6

Sayers, C., and Son, Mitcham, 289 0 0

Dale, S., Mitcham, 280 12 6

Lewin, G., Croydon, 270 0 0

Hill, G., and Sons, Streatham, 247 10 0

* Accepted.

NEWTON ABBOT.—For the construction of roads and sewers in connection with the first instalment of their Milner housing scheme, for the Newton Abbot Urban District Council. J. C. Beare, A.R.I.B.A., 42, Devonshire Square, Newton Abbot, architect and surveyor:—

Steer, A. J., Plymouth, £7,346 13 11

Forthgill Bros., Ltd., Exeter, 7,298 5 6

Harris, Edwin, Clyst Hydon,

Exeter, 7,230 0 0

Pollard, Geo., and Co., Ltd.,

Taunton, 6,600 0 0

* Accepted provisionally

STROUD.—For proposed extensions to the Marlborough School, Stroud. R. S. Phillips, Education Architect, Shire Hall, Gloucester. Lowest tenders (accepted) for carrying out the work:—

Contract No. 1.—Foundations, Brickwork, etc.

Orchard and Peir, Stroud, £2,280 0 0

Contract No. 2.—Superstructure.

Cooke, A. S., Stroud, £8,250 0 0

WARWICK.—For erection of houses for the working-classes in the parishes of Cubbington, Radford Semele, Shrewley, and Tachbrook, for the Warwick Rural District Council. H. Trepess, 1, Church Street, Warwick, architect:—

12 Cottages, Cubbington

Crouch, George, Warwick, £10,476 15 0

Crouch Bros., Kenilworth, 10,380 12 6

Pratt, John, Moaseley, Birmingham, 8,989 18 7

Bailey and Co., Leamington, 8,806 0 0

* Accepted

Six Cottages, Radford Semele.

Crouch, George, £4,980 0 0

Bailey and Co., £4,696 0 0

Pratt, John, £4,422 15 0

* Accepted.

Six Cottages, Tachbrook.

Crouch, George, £4,980 0 0

Pratt, John, £4,386 13 5

* Accepted.

Six Cottages, Shrewley.

Crouch Bros., £5,700 0 0

Crouch, George, 5,030 0 0

Pratt, John, 4,369 0 0

* Accepted.

The Buih Rural District Council have appointed Mr. Cadwgan Powell Jones, of Bristol House, Llangammarch Wells, to the position of surveyor.

The London Society will hold its sixth general meeting to-day at the Royal Society of Arts, John Street, Adelphi, at 4.30 p.m., when a paper will be read by Miss Amelia Defries on "Art and the City."

The National Federation of Building Trades Employers of Great Britain and Ireland has issued its "national building code" of regulations for entering into and carrying out contracts for building works in England and Wales, together with general conditions of contract and form of contract.

The Dingwall War Memorial Committee propose to proceed with an open-air cenotaph or monument to be placed if possible on a site adjoining the National Bank at Dingwall. Mr. J. J. Joass, of Messrs. Belcher and Joass, architects, London, a native of the town, having offered to act in an honorary capacity, has been invited to submit designs. The fund is expected to reach about £2,000.

The will of the late Mr. Henry Titus Wakeham, M.Inst.C.E., of Ashley Gardens, S.W., surveyor, engineer, and architect to the Middlesex County Council, formerly assistant borough surveyor of King's Lynn, borough surveyor of Oswestry and of Garston, Liverpool, and county surveyor of Hertfordshire, and a former president of the Institution of Municipal and County Engineers, has been proved for £17,470.

Although the comfort to be derived from statistics is notoriously cold in quality, it is evident that housing figures for Scotland continue to compare favourably with those for England. According to the latest returns, the number of tenders accepted is now in the neighbourhood of 5,100, sites being provided for about 33,000 houses, while the sum of money involved is, in round figures, £4,000,000.

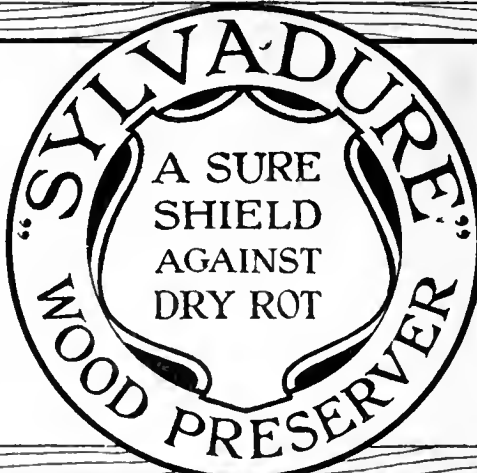
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Effingham House.

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OUR ILLUSTRATIONS.

Memorial Church, Colindale, Hendon, Middlesex.	
West front and detail of Portal. Lt.-Col. J. E. Dixon-Spain, F.R.I.B.A., Architect.	

Strand, W.C.2

Housing Scheme, Poplar Road, Leatherhead, Surrey.	
Plans and elevation, with lay-out plans. Mr. H. R. Gardner, Licentiate R.I.B.A., Architect.	
Two War Memorial Crosses, Windermere and Leake, Boston. Messrs. Temple Moore and Leale Moore, F.R.I.B.A., Architects.	
Edward Stott, A.R.A., Memorial, Amberley Churchyard, Sussex. Mr. Derwent Wood, A.R.A., Sculptor.	

Currente Calamo.

Dr. Addison's speech at the International Building Trades Exhibition last Saturday was in reality a direct confession of failure. He appealed for funds so that local authorities could set to work and build. But he said that having sanctioned tenders for 100,000 houses, his department is now "marking time a little." Now 100,000 houses is just about the normal number that used to be built each year before the war, and one of the reasons for the present shortage is the accumulation of arrears at the rate of about 100,000 a year. So far from making up any of those arrears, Dr. Addison has failed even to maintain his position and to prevent them from growing. He has sanctioned precisely the normal number of houses for the year, and the greater part of them still remain to be built. To "mark time" is, in this case, not to stand still, but to go backward. Moreover, as the Mayor of Stepney pointed out in the *Times* last Monday, the "marking time" is not due to lack of funds, but to the obstructiveness of the Ministry of Health. The Stepney Borough Council, in pursuance of its statutory duty under Section 1 (1) of the Housing and Town Planning Act, 1919, submitted to the Ministry of Health a scheme under Part III. of the Housing of the Working Classes Act, 1890, for the clearance of a site that was partly vacant and partly occupied by old and bad property and for the erection of houses thereon. Plans and working drawings were prepared, arrangements for the temporary accommodation of persons displaced were made, and the valuation and negotiations for purchase of the site were begun. At this stage the Ministry raised a technical point as to whether the site was not an "unhealthy area," represented as such by the Medical Officer of Health, and therefore to be dealt with under Part II. of the Act. After correspondence this point was disposed of, as no representation had, in fact, been made, and provisional approval was given to the scheme on January 8 of this year, and the necessary notices were served and proceedings for compulsory purchase pushed forward. All seemed in order when the Ministry of Health suddenly changed its mind. On March 16 the technical point was again raised and the council is invited to scrap all its previous work and to proceed under Part II.; instead of carrying out a complete scheme, it is in-

vited to patch up the rotten old houses and build only on the vacant part of the site. The time and cost already expended is to be wasted on the alleged ground of a hypothetical saving of expense by proceeding under Part II. This is but one instance of the way councils are being treated by the Ministry; every attempt to take action is thwarted, and schemes suggested to the council by the Ministry one month are turned down the next. It would seem clear either that there is some influence at work endeavouring to prevent local authorities from carrying out their duties in the provision of housing accommodation, or that Messrs. Dilly and Dally have not yet been demobilised.

A curious and indeed keep-it-dark sort of report has been issued by the Select Committee on Land Values, which was appointed last July to inquire into the present position of the duties imposed by the Finance Act of 1910 and to report regarding any alterations in those duties. After several sittings, the Committee, over which Sir Thomas Whittaker presided until his death, when his place was taken by Mr. Beck, state that, "owing to difficulties arising from different interpretations of the order of reference and divergent views as to the scope of their inquiry, they had been unable to consider the matters to them referred." They add that they had received proofs of evidence from various persons and organisations on the question, and this evidence is printed with the report. The inquiry demanded by the reference, we suppose, revived the burning political controversies which surrounded the institution of the land values duties of the 1909 Budget, that source of disaster to our own industries for which we were indebted to Mr. Lloyd George, and, apparently, ever since, to his adherents, who manage somehow to postpone or defeat the redress which has been twice promised.

Thirteen Lancashire towns have held a meeting in Manchester to decide what is and what is not the "luxury-building" which is prohibited in the interest of the building of houses. The question is as puzzling as "What is a luxury?" which a Parliamentary Committee failed to solve last year. The Manchester Con-

ference, which had the object of bringing some common principle into the prohibitive measures of the various towns, decided to classify building operations under three categories. Two of these were the essential and the unessential. Places of amusement are certainly non-essential, extensions of manufactories in important productive industries are as surely essential. The third category, comprises the "doubtful" cases, which, because they are doubtful, cannot be resolved by any classifying. The Conference cited offices and warehouses and buildings of relatively small national importance as coming within this section, which is reasonable and obvious. For the rest, we suppose all that any local authority can do is to examine each case as it comes up on its merits, applying the urgency of the need and the probable gain to the community at large as tests. That many local authorities will blunder, and that decisions will be as diverse as those of judges and magistrates, is certain, and that some will be as stupid is probable.

At a luncheon of "The Fifty Club," last week, Mr. Cousins, a paper-maker, told his hearers, quite truly, as we all know, that pulp had increased in value by 600 per cent. since 1914, and that the shortage will continue. Lord Burnham and Lord Riddell, both proprietors of newspapers of large sale, indicated that the public will have to pay more, and Lord Riddell said "there are very few papers with large circulations which are carrying on business at a profit." The increased cost, moreover, is not the only trouble. Since last September the difficulties of getting paper at all, at any price, have increased portentously, and there have been many weeks in which we ourselves have had to go round, almost hat in hand, for the supply for our next issue. That is why we are reluctantly compelled, week after week, to decline advertisements in justice to our regular advertisers of long standing who have first claim on our limited space, rather than increase our advertisement charges all round. For the present, journals of all kinds of small circulation have the advantage of others, as the trebling the cost of a few reams of paper is not a very serious matter!

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A meeting of the Royal Institute of British Architects was held on Monday at No. 9, Conduit Street, W., Mr. John W. Simpson (President) in the chair, the principal business being to hear Mr. John Begg (Consulting Architect to the Government of India) read a paper on architecture in that country.

The preliminary announcements related to the decease of a retired Fellow, Mr. Jas. Ledingham, and the grant of an Honorary Fellowship to Mr. Thomas Hardy, the distinguished novelist. Mr. Hardy's association with the Institute, it was announced, commenced fifty-eight years ago when he was awarded the Institute medal for an essay on the application of coloured bricks and terra cotta to modern architecture.

The President also announced that they welcomed the presence at their meeting of a distinguished member of the American Institute of Architects, Mr. R. A. Cram. He said there were all sorts of squabbles going on in the political world, but there was one point on which there was no friction, nothing but the most friendly and cordial contact, and that was art. It was the one sympathetic, permanent point of contact between all civilised nations. (Applause.)

ARCHITECTURE IN INDIA.

Mr. John Begg said that the architect's profession in India was a struggling one. Before the beginning of the twentieth century the Public Works Department, the great building agency, did not number a single professionally trained architect amongst its members. In 1901 he had been appointed Consulting Architect to the Government of Bombay and Mr. Ransome followed him two years later as Consulting Architect to the Government of India—the position that he himself now held. At the present time there were about twenty really qualified architects in government service and a somewhat smaller number in private practice. The official section of the European community was uncomprehending, the other section was apathetic. Yet there was no country in the world where building operations were more in evidence. Nowhere were the erection of new buildings and the alteration and adaptation of existing ones more light-heartedly undertaken. Nowhere were materials more plentiful and also labour of a sort. No country had a more imposing architectural heritage. As to what European architects had accomplished in India in the last twenty years, the Government architects had all been extremely busy. The aggregate cost of their executed works, if paid for at ordinary professional rate, would certainly have cost the public exchequer in fees a very great deal more than it had cost in salaries and office expenses. Further, he believed it could be shown that the employment of architects in place of the old departmental process had led to actual savings to Government such as would alone justify that employment. As yet he did not claim that they had done more than pioneer work. Each architect had been toiling away independently with little opportunity to meet others and compare notes. Their work had been of the nature of a number of sporadic experiments, the keynote in each case being derived from the individual's reading of specific conditions such as those of climate, materials, labour, surroundings and the purpose of the particular building. In a great area like India conditions and architectural results also varied greatly. Bombay, for instance, was energetic, exuberant, sparkling, breezy, and had building stone of many kinds and colours; while Calcutta was calm, respectable, orthodox, and its leading materials were brick and plaster. A massive type of classic renaissance had early asserted itself there. Bombay had remained to a greater extent style-free, with, however, a leaning to experiments in the Gothic manner after it had realised its wealth in building stones.

Mr. Begg then proceeded to show illustrations by lantern of architectural work in India. Many of these buildings were his own design. One slide showed Sir Jamsetjee Jeejeebhoy's School of Art at Bombay which was, said Mr. Begg, the only school of architecture in India. It was doing excellent work.

Another showed the Secretariat at Nagpur. This had been originally designed by Mr. Ransome, and afterwards handed over to Mr. Begg, but with instructions to cut it down in price a good deal. These instructions had been followed, but as much stone had been kept in as possible. Most of this stone had been brought from the other side of India, chiefly as ballast in ships. Another illustration, that of the Bombay Post Office, showed the first attempt that had been made by Mr. Begg to work in a sort of indigenous manner. He had left Bombay just as it was completed. Subsequent slides showed, however, that similar ideas had been applied and developed by Mr. Begg in later work done in other parts of India.

He continued: There is one very important result of the employment of architects which can hardly be gauged by the most copious exhibition of building photographs which I could possibly have put before you, but which I regard as not the least of our achievements in a country that is the slowest to move, and the most difficult in the world to impress. I claim it to be due to the architects that there has of late years been a very marked progress in building craft in certain specific directions. First, there has been an improvement in the making and handling of bricks. We were dismayed to find how little regard there was to those qualities in a brick which the architect looks to. Hardly one man in a thousand, of the many thousands engaged in building, knew the exact size of a brick, or what gauge it would build to. Time after time I have had to recast the half-inch details of buildings because of misleading information, and the discovery that the bricks could not after all be worked to the gauge agreed upon. That has become a thing of the past, and in most places of importance you can now rely on the data given you. Also, something has been done to standardise sizes. Again, the practice in handling bricks was hopeless. In Calcutta, for example, the bricks, none too shapely at that, were made some miles up the river. They were carted down to the waterside, and there dumped in heaps. Thence they were flung anyhow into barges and brought down to Calcutta, flung on shore, again flung into carts, and finally dumped once more at the building. Needless to say, after all this, they had no arrises left—but that was not thought to matter. All the more key for plaster, or, if a brick-faced effect were desired, the wall-surface was patched with mortar, then, evenly coloured, and the whole beautifully tuck-pointed with neat white lines! Naturally, the architects would have none of this, and the result, after much pegging away, has been seen in very marked improvements all round. I have in later years seen in India the best brickwork done that has come to my notice anywhere. Similarly with stonework. There are no finer quarries or better raw material in the world than in India. But we found them indulging in the most slipshod methods of work. Jointing hopelessly wrong, work built half-finished and dressed afterwards, etc. I believe we have taught the Indian building trade a wrinkle or two in masonry. There used to be a most heart-breaking trick in use on the Bombay side. In finishing cut-stonework they would point it all over with a wash of lime mixed with dust of the stone itself obliterating not only dirt and mortar-stains, but joints, tool marks, and other little "blemishes" as well! The effect, till a monsoon or two had played on it, was that of rather roughly-done plaster-work. I may say here that I have found the Indian workman to be exceedingly intelligent and resourceful, also tractable and amenable to sympathetic treatment. His faults lie chiefly in his training, or the want of it. He is apt to be slipshod, careless, and inaccurate. But show him that you are intelligently interested in his work, that you won't pass bad work, and are ready to appre-

ciate good; let him see that you can respect his personality, and at the same time that you can teach him something, and he soon brings to bear his own interest and his readiness to learn. He soon acquires the habit of sharpening his tools, of regarding the sixteenth of an inch, of taking pains and pride in his work. Like all mankind he shies at methods new to him, but keep at him, and his intelligence, tractability, and approbateness will soon bring him along to your side. When in Bombay I once worked out a method of constructing domes and domed vaults in brickwork, the merit of which was that no centring of any kind was required, to the great advantage of the work in economy as well as strength. The Bombay brick-masons had never dreamed of such a thing, and there was for a time like to be a strike on a small scale. But I stood firm, and found four bricklayers who consented to try. A small hemispherical dome, of about 20 feet diameter, was successfully completed, and subsequently others on a larger scale. I have had similar domes built by my method all over India up to a diameter of 50 feet without difficulty or mishap, and could now undertake to build one anywhere up to 60 feet, or even more. Indeed, there appears no limit within reason to which the method is not applicable. Prejudice has been quite overcome, and the method may be said to be the accepted one in the P.W.D. for the construction of such work, which is of considerable applicability to the uses of India. When I hear the Indian workman disparaged on the ground of his undue conservatism, untractableness, and unadaptability, I always think of my brick domes. He is all right if you take him in the right way.

Reverting to the disabilities of the architect in India, Mr. Begg said that one of the chief was the prevailing idea that he had no concern with, or responsibility for, the construction of his buildings, which was regarded rather as the work of the engineer. Private architects met this difficulty by styling themselves architects and engineers, but the Government man bore the title of "Consulting Architect," and was regarded as a design specialist. In Bombay a change had been effected, but elsewhere in India the disability still obtained, and was especially harmful in so far as it restricted the architect's touch with the workpeople. To look for the best results from an architect when he was not allowed to undertake the actual supervision of his work was like expecting a violinist to do himself justice while playing with gloves on. What ought to be the architect's guiding principle in finding the keynote of his architectural expression, by which the suitability of the latter for the soil of India was to be judged? One school held that in India we should do as the Romans did in every country whereon they planted their conquering foot, that we should take our architecture along with our law, order, justice, and western culture, that we should let the work of the past stand as a memorial of the past, and the work of the present stand to future ages as the memorial of the British Raj. The other school pointed to the fact that an uninterupted living tradition in architecture, linking the present direct with the past, existed in India alone perhaps among all the countries of the world. This school contended that the true policy was to shun all imported forms and ideas and imported architects also, and to feed the existing living tradition by the agency of the native architect with whom that tradition resided. He (Mr. Begg) found himself in some agreement with both points of view, but neither, he thought, quite touched the ground. The problem was one which could only be mastered by actually living with it, and watching it in relation to the ordinary daily architectural needs of the country, and twenty years' study of it had brought him to the position that the architect should take to India all his real principles, all his technical skill both in design and execution, and all the essence of his training, but nothing more. He should set

himself to a new pupilage, and study India's indigenous forms and expressions in relation to the conditions he found there. "Let him absorb these forms and expressions into his consciousness, until, without abandoning one essential of his earlier training, he can, as it were, not only speak, but also think architecturally in an indigenous manner. Then, and not till then, let him tackle the problems of design for specific conditions, and he will find he can arrive at a solution at once indigenous and architecturally sound, modern, and vital."

Of the second, the "Swadeshi," school, Mr. Begg said that the indigenous craftsmen were a simple people, all versed in the ways of modern life. They had the most rudimentary business ideas. Time could not be of the essence of any contract with them, nor could more than an approximation—if that—in matters of cost. It was not a working proposition that India should do without European architects. But every lover of India and of architecture would wish to speed the day when India should produce her own architects and have a strong healthy indigenous profession of her own.

DISCUSSION.

The President said Mr. Begg had raised the question as to the line which an architect in India should take. Should he insist on the rôle of the conqueror, and inflict his style on other people, or should he take his training, technical knowledge and science and adapt it to the style of the country in which he worked? But Mr. Begg had answered this question by exhibiting the illustrations of his work in a chronological order. Starting with purely European ideas, which had not seemed to fit the surroundings, he had developed into a clean study of black and white, which was all that was wanted, because the sun in India emphasised detail to such an extent that the less there was of it the better it told.

Mr. R. A. Cram said he had been introduced to the meeting as a member of the American Institute of Architects, but he was even prouder of being an honorary corresponding member of the Royal Institute of British Architects. He agreed with the President in thinking that it was fortunate that Mr. Begg had shown his work in chronological order. In the earlier work there seemed to be reminiscences of styles, but gradually something grew up through those styles. In the end they found that Mr. Begg had achieved style itself. Was not that the great object of architecture, the getting away from styles as such and the achievement of actual style? Style was a very much greater thing than the styles they knew historically. Architects had to go back to these constantly, in order that they might obtain their *point d'appui*, but they went on from them, finding from them what the real qualities were, and little by little eliminating the more or less incidental qualities of the styles themselves and getting down to the fundamental. There was a danger of architects contenting themselves with a more or less accurate reproduction of some past historic style, and that danger was greater in America than here, because in America there was so little in the line of architectural continuity. If architects contented themselves with narrow and limited archaeological forms they would produce nothing but a chimera, a thing in which there was no real vitality. Through the study of those elements in past history which had produced great civilisations we might achieve what he would call the style of real civilisation, and, having achieved that, we could go forward content with the future that would open out before us. At the present time all those divisions that separated one race of people from another were being emphasised for political, financial and material considerations only in a fashion that bade fair to bring the community of modern civilisation to an end in black disaster. He believed that architects, and all who followed the different forms of art, could play a very great part in working against that policy of division; because they represented one of those things where there was no political division, and could be none, for art was, and always had been, the expression of all the best there could be at any time or place. He spoke, not only of architecture, but of painting, poetry and all

the great arts. He would urge that architects should realise a unifying and a creating force, and that it was a work which it was their duty to take upon themselves. He spoke for a country that was inevitably misunderstood, and he wished to say that America was in the person of the majority of her people staunchly, steadfastly and permanently with her former Allies as she had been during the great days of the war. (Applause.)

Mr. James Ransome moved a vote of thanks to Mr. Begg. He said from the examples that had been shown them it was clear that Mr. Begg was to be congratulated not only on his own designs but on his influence of the designs of others. It was with the greatest concern that he (Mr. Ransome) heard rumours that the post of Consulting Architect to the Government of India was to be abolished. And his fears in that respect were not lessened when he heard that there was a lack of co-ordination and united effort amongst the Government architects practising in India. He had a very lively recollection of his own sense of isolation from his fellow architects when in India and of his inability to discuss with those who understood the architect's aims and *raison d'être*. In the later part of his service he had had the good fortune to come under the direction of Sir Lionel Jacob, but it was hardly an exaggeration to say that, except for that, he had associated with no one in authority equipped with a sufficiently intelligent interest in architecture to further the cause which he had at heart. He remembered his consternation when it was pointed out to him that the cone-shaped roof of his design for the Simla bandstand could not be constructed because it afforded no space for the sixteen steel roof principals essential to its support, and he was not likely to forget a certain official note which practically asked: "Why cannot the Consulting Architect leave construction alone?" It was disappointing to hear that ignorance and apathy in Indian architecture had not made way for a wider knowledge and sympathy with the subject, but if this were the case it seemed to him that the time had not yet arrived for the abolition of the only official qualified to assist and co-ordinate the efforts of the various provincial Government architects. Mr. Begg had asked what should be the guiding principle of architectural expression in India? It seemed to him (Mr. Ransome) that the answer was Utility. Some months after his arrival in India he had been asked the same question, and on his expressing the opinion that the future development must be along Anglo-Indian lines, he had been instructed not to put up any mongrel buildings in the country. Calcutta should be Classic, Bombay Gothic, Madras Saracenic, Rangoon Renaissance, and so on. These instructions had forced on him the task of adapting various styles to the requirements of India, and had confirmed him in his suspicions that these styles were one and all unsuitable to Indian conditions and that any attempt at conformity with the laws of Style was bound to fail. On the other hand, a study of modern buildings showed that as they departed from tradition so they approached excellence—witness the new Government Buildings at Delhi. There was little evidence to show that the Mohammedan invaders of India had been concerned that their architecture should stand to future ages as an example of their rôle in India, or that they had fostered and fed living tradition; but by an insistence on their own methods of construction, and an intelligent employment of such practices as they had found in the country, they had arrived at results which neither they nor the people they conquered could have achieved. If we followed their example, giving India of our best, and availing ourselves of any useful suggestion she had to offer, we might some day achieve something which would bear comparison with the Taj Mahal.

Sir Lionel Jacob seconded the vote of thanks. He said he spoke not as an architect but as an engineer. Between architects and engineers, even in this country, there was sometimes a little friction, but no one could conceive the amount of friction that had existed at one period in India. For a century the public works of India, engineering and architectural, had been entrusted to

military engineers, who had had little training, having gone out to the country as mere boys of sixteen or seventeen years of age. These had been followed at a later period by civil engineers, who had had a longer course of education, and arrived in India at twenty-two, twenty-three, or twenty-four years of age. When it was proposed to introduce architects into India, the engineers thought that architects were artists of a class who would put a few embellishments on a building which would cost a little money but could be of no possible utility. They did not understand that the architect had learned something of economical planning, and that although he could give his buildings a great deal more charm than those designed by the engineer, he could also design them so as to be a great deal more economical in construction.

Mr. H. H. Statham said he thought that buildings erected for our Government purposes in India should, to some extent, bear the stamp of having been built by the English nation for the English Government. At present we had settled down rather on Classic lines, a style which suited the Indian climate better than our own. He thought official buildings in India should bear some stamp of Classicism, modified by conditions of atmosphere. The flora of the country should be very suggestive for detail, and the effect would be modified by the necessity of producing shade on the walls. Something might thus be produced very beautiful and novel in architectural style.

The vote of thanks was unanimously accorded, and, Mr. Begg having acknowledged the compliment, the meeting ended.

ROYAL ACADEMY ATELIERS.

A scheme has been prepared under the general supervision and control of the Royal Academy for the co-ordination of advanced architectural training in a group of ateliers which will work on the Beaux Arts system, and will be open to students day and night. The main purpose of the scheme is to promote the study of design on the lines which the Beaux Arts method has proved to be so valuable; and it is intended to meet the requirements of students who are working in offices during the daytime and who will seldom have more than the evening time to spare.

Subjects in design will be set every two months, and the drawings submitted in competition between the ateliers will be regularly exhibited to the public. It is hoped that an annual exhibition of these drawings and of the winning designs in the competitions may be arranged at the Royal Academy. As in the Paris ateliers, subjects will be divided into first and second classes, and students will be required to win a minimum number of "mentions" in design before passing from the first to the second class. Students who have taken a recognised school course will be admitted to an atelier without entrance examination.

The whole group of Ateliers is to be controlled by an Atelier Council appointed by the Council of the Royal Academy, and it is expected that diplomas will be granted by the Atelier Council to fully qualified students in the first class who have passed the necessary tests of distinction. The group will initially consist of "The First Atelier," the Architectural Association, and the London University Atelier. Intending students should write for particulars to the Secretary, Architectural Ateliers Committee, 34, Bedford Square, W.C.

A new church is to be built at Finglas, Co. Dublin, from the designs of Messrs. Ashlin and Coleman, architects.

A memorial statue is being erected to the late Dr. Croke, Archbishop of Cashel, the foundation stone of which was laid on March 17. The memorial will be executed in bronze and Irish limestone. Its height will be 24 ft. The column is three-sided, and the steps are trefoil in plan. A bronze inscription panel with the arms of Cashel occupies the niche space at back. The side figures represent St. Patrick and Erin, and on the plinth are the words "For God and Country." The designer and sculptor is Mr. F. W. Doyle Jones, Chelsea.

THE INTERNATIONAL BUILDING TRADES EXHIBITION.

We resume our notes on the Building Exhibition at Olympia, in continuation of those we gave in our last two issues:—

This afternoon, at 3.15, a Conference of municipal and county engineers will be held in the large hall in the gallery, presided over by Mr. H. E. Stilgoe, M.Inst.C.E., chief engineer to the Metropolitan Water Board, and president of the Institution of Municipal and County Engineers, and the following papers will be submitted for discussion in the course of the proceedings:—"Roads for Modern Transport Requirements," by H. T. Chapman, M.Inst.C.E., County Surveyor of Kent, and "Labour-Saving in Municipal Work," by F. W. Bricknell, M.Inst.C.E., City Engineer of Hull. A meeting of the Institution of Municipal and County Engineers will follow, at 5.30 p.m., when a paper will be presented on "Post-Bellum Road Restoration," by H. Richardson, Assoc.Inst.C.E.

Opening the Exhibition last Saturday, Dr. Addison, the Minister of Health, said that up to the present the housing tenders which had come in from month to month showed a marked inclination to increase. He had in his Department now cases relating to several thousands of houses where tenders had been approved, but the schemes were held up because local authorities found themselves unable to sign the contract because the necessary funds were not forthcoming. The Ministry of Health had approved tenders for nearly 100,000 houses, and there was nothing whatever to prevent the work being pressed forward with all possible speed, so far as the Ministry was concerned. They could easily make the number 200,000 by the end of June, but he proposed to mark time until he had seen the 100,000 built. The housing schemes in existence alone were sufficient to absorb practically every bricklayer in the country.

Mr. E. C. L. Mosse, of the Housing Department of the Ministry of Health, confessed, on Tuesday, that the Government scheme of subsidies to private builders is not going well. He told a conference, held at Olympia, under the auspices of the Society of Architects, that up to the present certificates had been issued for about 3,800 houses, and that, he added, was not much to boast about. They wanted help in bringing the scheme to the notice of the builders, for they could not get houses built by sitting in Whitehall and issuing memoranda.

In a general outline of the scheme, Mr. Mosse said that, apart from the subsidy, there would be no Government advance, and the additional capital must be found by the builder himself. The Ministry understood, however, that building societies would advance as much as 75 per cent. of the actual cost of building to intending occupying owners, and would also make advances to speculative builders, but not to the same extent. They had also approached the banks, and understood that they would lend to builders who were entitled to the Government subsidy.

In a discussion one speaker said the fear of another "People's Budget" by Mr. Lloyd George, such as that of 1910, was keeping a large number of people from investing in real estate.

Another speaker said the fact that it was proposed that the Rent Restriction Act should go on for another three years had put the last nail in the coffin of private building.

It was urged by others that the subsidy was much too small, and should have been at least double to be effective.

The President of the Society, Mr. E. J. Sadgrove, who presided, referred to the question of working men owning their own houses, and suggested that such ownership was opposed to the policy of the Labour party. There was also the fear of future legislation. He thought a large number of working men would love to own their houses, and the Government would be only too pleased to support them, but there was always the trouble that they were afraid to do it.

Our Illustrations.

MEMORIAL CHURCH, COLINDALE, HENDON.

The interior of this church was shown in the Royal Academy in 1915. Its erection has been delayed by the war, but will be proceeded with as soon as funds permit. It provides a much-needed church for the new town of Colindale, which has practically been created by the war, and remains the centre of the aeronautical industries. One chapel is designed as a memorial to the officers and men of the flying services who fell during the war. The church will necessarily have a very special and intimate connection with these services. The west doorway is a design based on a gateway, now destroyed, at Ypres, which was recorded by detail measurements made by the architect, Lieut.-Colonel J. E. Dixon-Spain, F.R.I.B.A., in February, 1915.

LEATHERHEAD HOUSING SCHEME.

The site is just under six acres in extent, is practically level, entirely open, with no trees or other features to influence the lay-out. The only problem needing special consideration was the necessity for providing means of communication between the site and the possible future development of the adjoining land. Under these circumstances an orderly lay-out was decided upon, and variety obtained by building the houses in blocks of two, three, four, and six. The plans and elevation of the six houses illustrated refer to the two blocks shown at either end of the site and facing the existing road. The aspect is north-west, and this has, of course, considerably influenced the general disposition of the rooms. Not only the living rooms, but the sculleries and bath-rooms enjoy the benefit of a sunny aspect. Each scullery has ample floor and wall space for the accommodation of gas-cooker, sink, draining board, mangle, shelving, and other necessary conveniences. The dressers are placed between the living rooms and sculleries, with a door on either side. The level of the dresser slab coincides with that of the sink draining-board. The soiled china is passed directly from the dining table to the sink, from whence it is again placed in the dresser ready for further use on the living-room side. The bath-room, lavatory basins, fireplaces in the third bedrooms and the projecting fireplaces in the end walls will be omitted, in accordance with the wishes of the Housing Commissioner. The builders are Messrs. H. Taylor and Son, of Epsom. The quantities have been prepared by Messrs. Baker and Mallett, of Chancery Lane, and Mr. H. R. Gardner, of Leatherhead, is the architect.

TWO WAR MEMORIAL CROSSES: WINDERMERE AND LEAKE, NEAR BOSTON.

Both these monuments are executed in Portland stone. That at Leake is being carried out by Messrs. Benfield and Loxley, of Oxford. The other is the work of Mr. Swallow, of Windermere. The site in each case is in the parish churchyard, and the drawings were shown at the War Memorials Exhibition held by the Royal Academy. Messrs. Temple Moore and Moore, F.F.R.I.B.A., are the architects.

THE EDWARD STOTT, A.R.A., MEMORIAL, AMBERLEY CHURCH-YARD, SUSSEX.

This monument, lately erected by Miss A. Dinnage, is surmounted by a bust of the painter and carved with the story of Orpheus, designed and executed by Mr. Derwent Wood, A.R.A. Mr. P. H. Hood, of Acton, took this photograph. The

inscription reads: "Edward Stott, A.R.A., born April 25, 1855, died March 19, 1918. Lived in this parish thirty years. By his works ye shall know him." The Norman church at Amberley is prominently situated on an elevated position in the neighbourhood of Arundel, midst very picturesque surroundings. The studio of Edward Stott is hard by. "The Sacred Pool" and "The Holy Family" are among his well-known pictures, and he left his last unfinished painting on an easel when he died. In the BUILDING NEWS for January 7 last we published a double-page plate of the memorial window set up in Amberley Church by Miss Dinnage from the beautiful design of Mr. Anning Bell, A.R.A., so this Sussex Mecca for painters has been permanently enriched by two fine works of art.

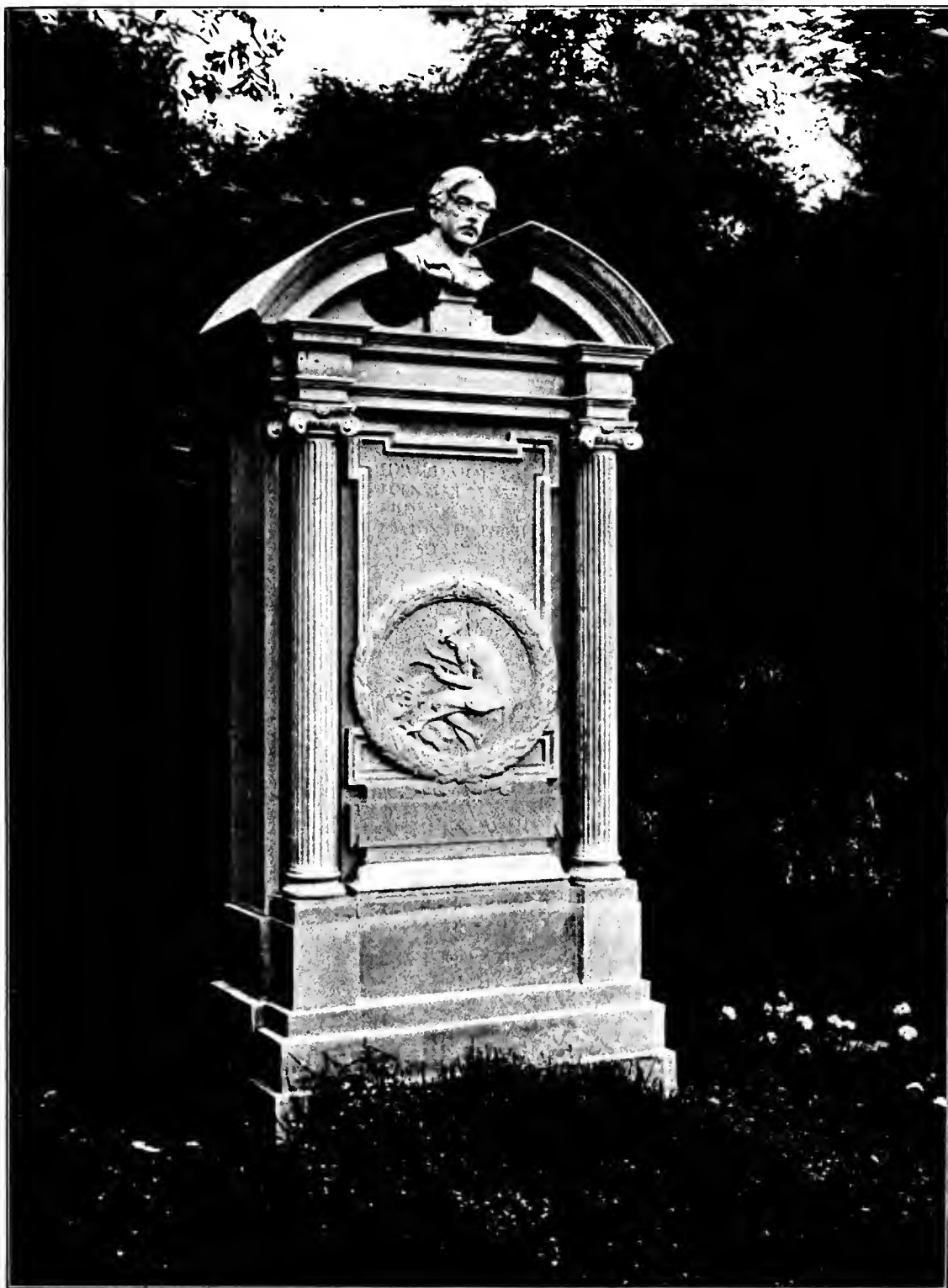
PROFESSIONAL AND TRADE SOCIETIES.

AUCTIONEERS' AND ESTATE AGENTS' INSTITUTE.—Sir H. Trustam Eve, in a paper on "Village Reconstruction," read at a meeting of the Auctioneers' and Estate Agents' Institute last Friday night, made an earnest plea for the model village. As surveyors, auctioneers, and agents, they had, he said, enormous influence and much power. Too often they proceeded to lot out the land without reference to other lands not in possession of their client, and with regard to the interest of his pocket only. The present "shape" of many villages was due to the planning of surveyors and auctioneers extending back to beyond memory. A rearrangement of boundaries would improve many squalid and cramped villages and gladden many hearts. Labour could be happily anchored in a happy village. The reconstruction of a village, therefore, should be done well and boldly or not at all. The scheme must include cottage gardens in the best places; cow commons and, in certain cases, horse commons; small holdings on the best land, even if good grass had to be ploughed up; also places for games. Village industries must be fostered, and provision for raw materials arranged if they existed locally. Nothing must be left to chance. The weaker vessels must be helped so that they could live and thrive, and, as far as possible, they must be placed so that they were independent of big men. Some people might call that Socialism, but to make one's fellow creatures happy, even at one's own expense, was a pleasurable vocation. Dealing with footpaths, he said it was difficult to go for a walk in the neighbourhood of some villages without trespassing, and perhaps without the risk of being summoned for being "in search of conies." He advocated new and pleasurable footways and the review of all the existing footpaths. A small wood, or two or three spinneys, might be secured for the villagers, where they would have the right to gather primroses or bluebells. He insisted on the need for obtaining the support of the parish councils for any schemes of reconstruction. He submitted various proposals on the lines he had suggested, recommending that the Ministry of Agriculture should be responsible for carrying out the scheme and the parish council for its subsequent administration, subject to the supervision of the Ministry.

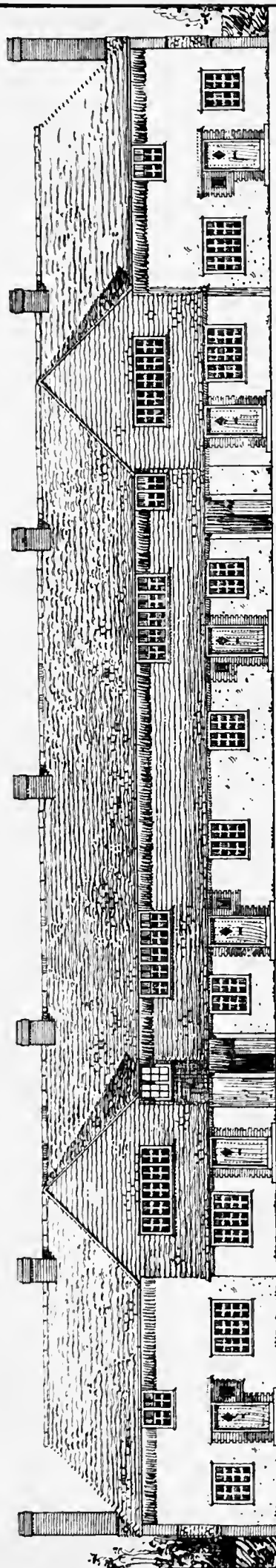
COMPETITIONS.

ARTHURET WAR MEMORIAL HALL COMPETITION.—Members of the Society of Architects are asked not to take part in the above competition without first ascertaining from the Secretary of the Society that the conditions have been approved by the Council.

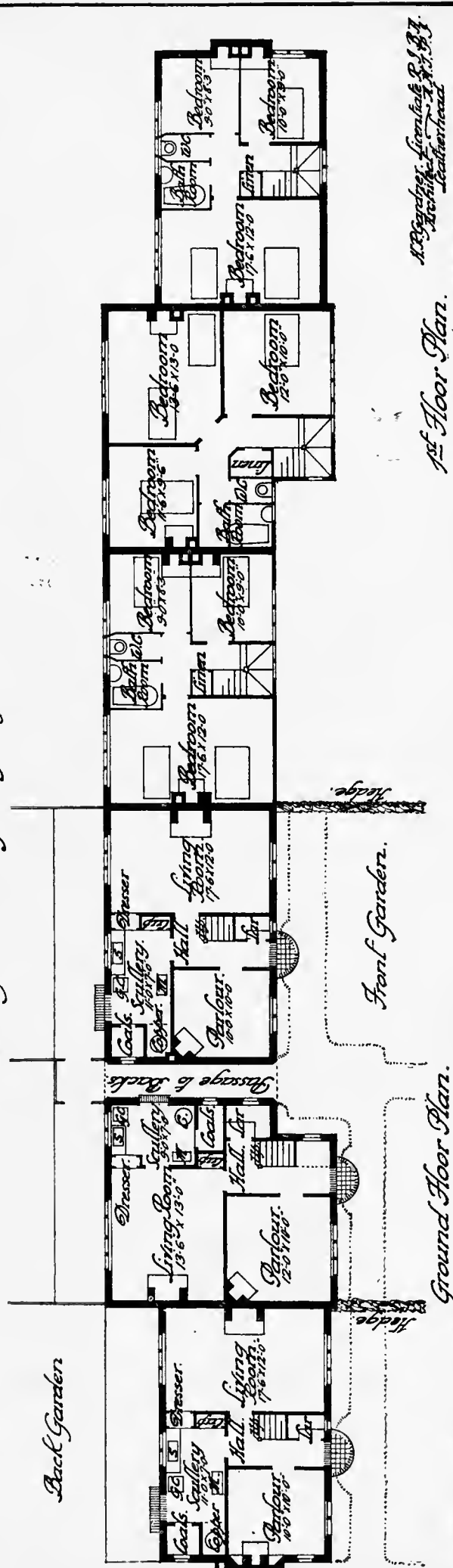
CHATHAM.—The prize of £137 10s. offered by the Chatham Corporation for the best design for the new Garden City has been won by Mr. W. Harding Thompson, A.R.I.B.A., of Museum Street, W.C. The Garden City will contain 300 working-class homes, a church, and of course facilities for education and recreation. There were sixty-one designs submitted, and Mr. Guy Dawber, vice-president of the R.I.B.A., acted as adjudicator.



EDWARD STOTT, A.R.A., MEMORIAL, AMBERLEY, SUSSEX.
Mr. DERWENT WOOD, A.R.A., Sculptor.



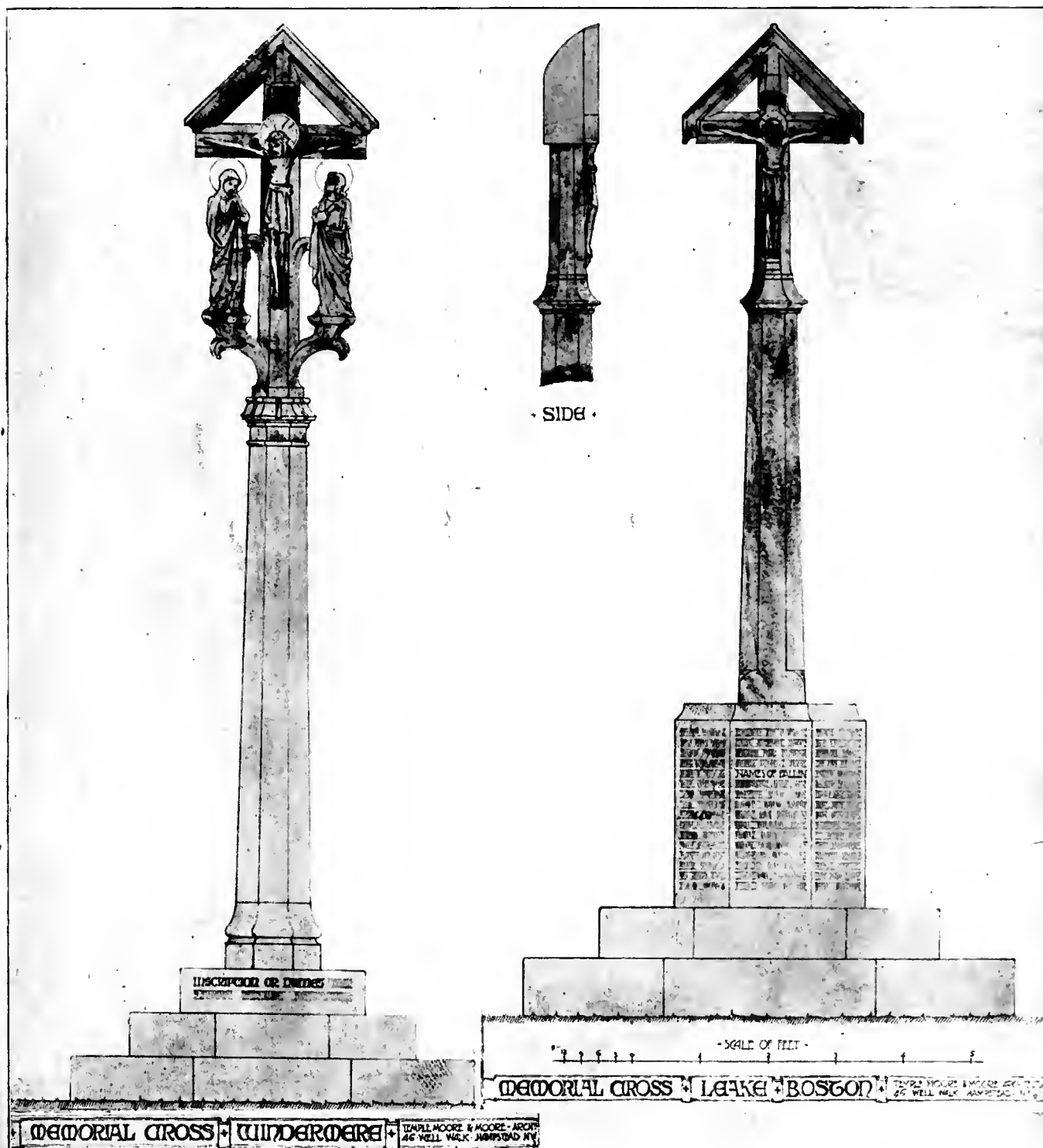
Block of 6 Houses facing Poplar Road.



H. P. Gardner: *Scientific Papers*
Archives of the
Leatherhead

1st Floor Plan.

HOUSING SCHEME, POPLAR ROAD, LEATHERHEAD, SURREY,
Mr, H. R. GARDNER, Licentiate R.I.B.A., Architect,

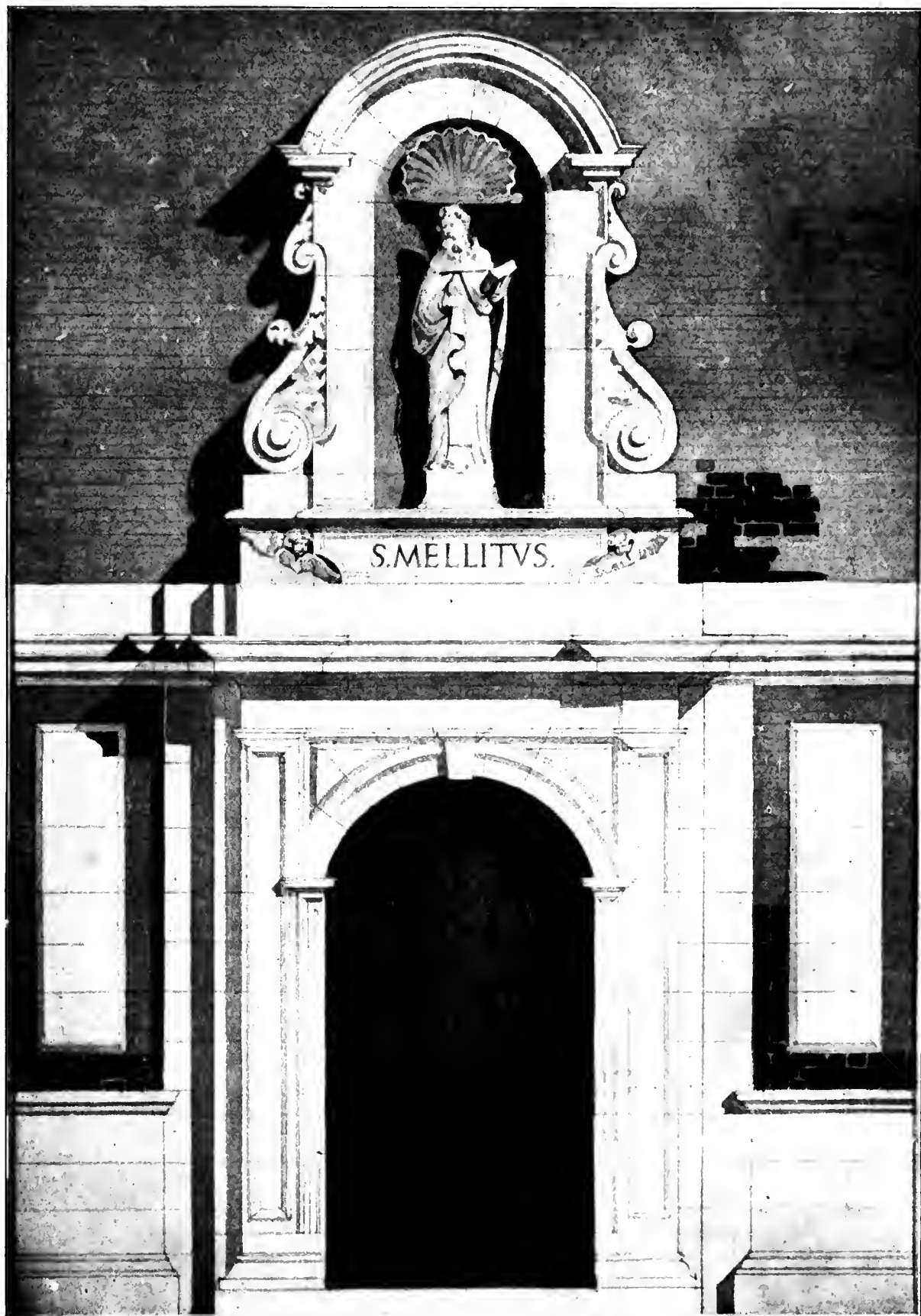


TWO WAR MEMORIAL CROSSES, WINDERMERE AND LEAKE, BOSTON.
Messrs. Temple Moore and Moore, F.F.R.I.B.A., Architects.





MEMORIAL CHURCH, WEST FRONT, COLINDALE, HENDON.
Lieut.-Colonel J. E. DIXON-SPAIN, F.R.I.B.A., Architect.



THE YPRES DOORWAY, MEMORIAL CHURCH, COLINDALE, HENDON.
Lieut.-Colonel J. E. DIXON-SPAIN, F.R.I.B.A., Architect.

1. The first part of the report deals with the general situation of the country in 1944-1945. It describes the political and economic conditions, the state of the economy, and the social conditions. It also mentions the state of the country in 1946-1947, 1948-1949, 1950-1951, 1952-1953, 1954-1955, 1956-1957, 1958-1959, 1960-1961, 1962-1963, 1964-1965, 1966-1967, 1968-1969, 1970-1971, 1972-1973, 1974-1975, 1976-1977, 1978-1979, 1980-1981, 1982-1983, 1984-1985, 1986-1987, 1988-1989, 1990-1991, 1992-1993, 1994-1995, 1996-1997, 1998-1999, 2000-2001, 2002-2003, 2004-2005, 2006-2007, 2008-2009, 2010-2011, 2012-2013, 2014-2015, 2016-2017, 2018-2019, 2020-2021, 2022-2023, 2024-2025.

2. The second part of the report deals with the general situation of the country in 1944-1945. It describes the political and economic conditions, the state of the economy, and the social conditions. It also mentions the state of the country in 1946-1947, 1948-1949, 1950-1951, 1952-1953, 1954-1955, 1956-1957, 1958-1959, 1960-1961, 1962-1963, 1964-1965, 1966-1967, 1968-1969, 1970-1971, 1972-1973, 1974-1975, 1976-1977, 1978-1979, 1980-1981, 1982-1983, 1984-1985, 1986-1987, 1988-1989, 1990-1991, 1992-1993, 1994-1995, 1996-1997, 1998-1999, 2000-2001, 2002-2003, 2004-2005, 2006-2007, 2008-2009, 2010-2011, 2012-2013, 2014-2015, 2016-2017, 2018-2019, 2020-2021, 2022-2023, 2024-2025.

Correspondence.

THE WAR MEMORIAL OF THE "ECOLE DES BEAUX ARTS."

To the Editor of THE BUILDING NEWS.

Sir,—I have received from the Ministry of Public Instruction and Fine Arts in Paris particulars of the formation of a committee for the erection in the "Ecole des Beaux Arts" of a monument to the students and members of the school who laid down their lives during the war.

A subscription list has been opened to obtain funds for the erection of the monument. I enclose a copy of the appeal, and shall be much obliged if you will kindly bring it to the attention of your readers.—Faithfully yours,

IAN MACALISTER, Secretary.

The Royal Institute of British Architects,
9, Conduit Street, Hanover Square,
London, W.1, April 9, 1920.

Paris, April 9, 1920.

Ministère de l'Instruction Publique et
des Beaux Arts.

Ecole Nationale Supérieure des Beaux Arts.
Monsieur,—Les professeurs de l'Ecole Nationale des Beaux Arts réunis sous la présidence de leur vénéré directeur, M. Léon Bonnat, ont décidé de constituer un comité chargé d'assurer l'érection dans l'école même d'un monument aux élèves et membres du personnel morte pour la Patrie.

Il a semblé nécessaire, avant tout, d'ouvrir sans retard une souscription publique pour réunir les fonds indispensables à la réalisation de ce projet. En tête de la première liste de cette souscription devront figurer les professeurs et les amis les plus directs de l'Ecole qui voudront bien s'associer à nous pour réaliser ce pieux dessein. Leur adhésion entraînera beaucoup d'autres tant en France qu'à l'étranger.

Nous nous permettons donc de vous envoyer quelques bulletins de souscription. Nous

vous serions reconnaissants de bien vouloir adresser le vôtre à M. Pontremoli, trésorier du comité, 1 rue Spontini, à Paris. Nous vous demandons de distribuer les autres autour de vous pour nous aider à recueillir les sommes nécessaires. Celles-ci ne seront jamais trop considérables. Il faut, en effet, que ce monument soit digne des jeunes artistes qui sont tombés et digne de l'Ecole qui l'abritera.

Veuillez agréer, Monsieur, avec tous nos remerciements, l'assurance de notre considération très distinguée.

LE COMITÉ.

The report for the year ending December last of the Liverpool and District and North Wales Branch of the Auctioneers' and Estate Agents' Institute, shows good progress. The annual meeting of the branch will be held at the Midland Adelphi Hotel, Liverpool, on April 21 at 5 p.m., followed by a dinner at 7 p.m.

At Belfast, according to the *Irish Builder*, the Master Builders' Association had offered to build a number of experimental houses at a profit of 5 per cent. on the outlay, if the Corporation would appoint a committee of architects to assess the cost. This was done, but in all cases the builders refused to accept the architects' valuation as being too low for every type of house, the smallest difference being no less than £300 a house. Other builders outside the association have since submitted tenders below the architects' estimate.

At a meeting of the Thetford Rural District Council last Friday a letter was read from Mr. Leonard, the Housing Commissioner, inquiring what progress had been made in regard to the use of clay lump as a walling material in connection with the Council's housing scheme. The Chairman stated that the Commissioner had announced that the Ministry had approved of the use of clay lump walls, and authorised the Committee to proceed with making the necessary clay lumps in the several villages, by means of direct labour, under the supervision of Mr. Howell (the Council's Building Surveyor). It was estimated that the use of clay lump would effect a saving of about £50 a house.

Our Office Table.

Mr. William James Sommerville, only son of Mr. S. Sommerville, was married on Saturday at All Souls' Church, Langham Place, to Vivien, elder daughter of Major H. Passmore Edwards, the Chairman of the Strand Newspaper Co., Ltd., and Mrs. Passmore Edwards, and eldest granddaughter of the late Mr. John Passmore Edwards. The vicar of Hampstead, Dr. Goldsmith, officiated, assisted by the curate-in-charge, the Rev. A. G. Davidson. Major Passmore Edwards gave his daughter away, and she was attended by one page, Master John Phipps, and five bridesmaids—Miss Joan Passmore Edwards, Miss Edith Sommerville, Miss Phyllis Clark, Miss Kathleen Phipps, and Miss Althea Faulkes. Mr. James G. Connell acted as best man. Major and Mrs. Passmore Edwards subsequently gave a reception at the Langham Hotel, to which most of the very numerous guests who had been present at the wedding were able to adjourn in comfort, thanks to the brief but beautifully bright spell of fine weather with which all were favoured, so propitiously, as all hope, ushering in a bright future for the wedded pair.

A well-deserved tribute of esteem and affection was paid on Wednesday by some eighty of his old colleagues on the Press to Mr. W. D. Nott, for fifty-one years a well-known figure in Fleet Street, who entertained him to luncheon at Anderson's Hotel on the occasion of his retirement into private life, and presented him with an illuminated address and a substantial cheque. The chair was taken by Mr. Young, of the House of Cassell, in which Mr. Nott made his first start, and the presentation was made by Major Harry Passmore Edwards, the Chairman of the Strand Newspaper Company, Ltd., who claimed justly to have been the youngest friend of Mr. Nott from the age of seven years or thereabouts, during the latter's

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twenty-five years as advertising manager of the old *Echo*, during the successful conduct of that much-missed journal by the late Mr. J. Passmore Edwards. Mr. Nott, in acknowledging the toast of his health, gave some interesting reminiscences of past journals, and of his first interview with the late Mr. Passmore Edwards, who had that day bought the *Echo* of its then proprietor, Baron Grant, in the imposing if somewhat gaudy advertisement office, which not a few people mistook for a public-house, on the whole of the south-western corner of Ludgate Circus. Some pleasant words by one or two other friends concluded the gathering, to the arrangements for which all thanks were tendered to its kindly organisers, Mr. Pook, of the *Irish Times*, and his co-helpers.

Recent additions to the National Gallery include Two Apostles by Ugolino da Siena, another fragment of the Altar-piece of S. Croce, which is now hung in the vestibule. It was presented through the National Art-Collections Fund by the Earl of Crawford. In Room XX. is hung a landscape by Cornelis Vroom, signed 1626. This artist (b. circa 1600, d. 1661) is of the generation before J. van Ruysdael. This picture has been presented by Mr. Robert C. Witt, through the National Art-Collections Fund.

The Board of Education notify that the draft, dated January 14, 1920, of the Regulations for the Superintendence of Examinations in Art, has been published for the required period, and has now been confirmed by the Board without substantial amendment, though with a slight alteration in the wording of paragraph 1 and a change in the title. The draft now becomes Art Examinations (Superintendence) Regulations, 1920, dated March 26, 1920, and copies can be purchased through any bookseller (price 1d.) or directly from H.M. Stationery Office, Imperial House, Kingsway, London, W.C.2 (price by post, 1½d.).

Electricity is becoming more and more firmly entrenched in the motor industry.

The modern car, in practically every one of its subsidiary functions, depends upon the utilisation of electrical energy. What with electric ignition, electric self-starters, electric heating, electric horns, and, last but not least, electric lighting, the up-to-date car is an "all but" electric vehicle. Perhaps the most satisfactory feature of the rapid electrification of the petrol car is the fact that all the devices mentioned are now being manufactured in large quantities in this country. To take just one example, the importation of electric lamp bulbs has ceased. Our own lamp manufacturers, owing to the extended adoption of mass production methods, are experiencing no difficulty in satisfying the present home demand. At least one manufacturing concern, the British Thomson-Houston Co., Ltd., of Rugby (makers of the famous Mazda lamp), have recently increased their productive capacity to such an extent as to ensure throughout the coming season of pleasure a plentiful supply of British made electric lamp bulbs.

The building of skyscrapers as a solution of the Bombay housing difficulties has at last been discussed at a meeting of the Corporation. There is, of course, doubt of the possibility of erecting such edifices on the prevailing soil, apart from the large tracts of Bombay that represent reclaimed land. The fact that New York abounds in skyscrapers is due largely to the rock foundation on which that city stands, and therefore the feasibility of such buildings, either of reinforced concrete or of masonry, is a matter for expert opinion to decide upon before it can be attempted. It is certain that by these means only can the requirements of both Calcutta and Bombay be met in the near future without an impossible distance of expansion having to be resorted to.

St. Asaph, where the new Archbishop of Wales will be enthroned, is one of our two smallest cities, and possesses the smallest of all the British cathedrals. The present building dates from the days of Henry VII.,

and replaced an earlier structure which had been devastated both by Edward I. and by Owen Glyndwr. The interior, which has repeatedly been restored, contains a fine modern reredos, and a monument to a former dean—Dr. Shipley—who was tried for a criminal libel in an attempt to promote the dissemination of wholesome literature! Mrs. Hemans, who resided in this neighbourhood, is also commemorated here. From the cathedral tower, a very conspicuous way-mark, there is a magnificent view of the Vale of Clwyd.

The prospectus of the Fireproof (Oxylene) Manufacturing Co., Ltd., which appears on another page, is well worth the attention of our own readers, especially those interested in the preservation from fire of wooden buildings. It is formed to acquire from the Timber Fireproofing Co., Ltd., on very advantageous terms, land on which to erect works equipped with up-to-date joinery and woodworking machinery, and has been fortunate enough to secure the services as manager of Mr. A. C. Hunt, for many years the architect to Messrs. Cadbury Bros., of Bournville, and who during the war was responsible for the design and erection of many important works for the Ministry of Munitions. The capital is a modest one, and the directorate a strong one. The sphere of operations is a wide one, including as it does the making of safes, deed boxes, fittings for archives and muniment rooms of wood, which are becoming increasingly popular now that a really satisfactory fireproofing agent is available, and we believe good dividends and a continuously successful business are certain.

At an extraordinary general meeting of the Auctioneers' and Estate Agents' Institute, at 34, Russell Square, last Friday afternoon, it was resolved to revise the articles of association of the institute so as to provide for the admission of women. The decision will be confirmed at a further meeting to be held on April 27.

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THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House.

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Strand, W.C.2

The Entrance Hall, "The Woodlands," Harrow. Mr. George P. Bankart, Architect.
New Premises at Casablanca, Morocco, for the Bank of British West Africa, Limited. Working drawing of the facade. Mr. H. G. Holt, A.R.I.B.A., London, and M. Georges Vimort, S.D.G.A.D.G., Paris and Casablanca, Architects.

Currente Calamo.

The one good point in the Budget is the repeal of the Land Values taxes—Mr. Lloyd George's "rare, refreshing fruit" which grew rotten at the core before it could be gathered, and landed us with an army of officials who, *mirabile dictu*, are still to be retained, and draw many times in salaries the amount the taxes have ever yielded. That doubtless is a concession to Dilly and Dally, like so many others which are helping to pile up the big deficit Mr. Chamberlain has evaded, more or less in many ways, at the cost of production. It is no business of ours to discuss the increase in the excess profits duties and those on liquor. The profiteers—high and low—will still swill to their hearts' content, and "the trade" will recoup itself, as usual, at the expense of its victims. The increase of taxation of legitimate joint stock companies is unjust and unfair, especially as the co-operative societies are still to go free, which are nothing but joint stock companies in camouflage, and in no way any more beneficial to their customers—in many ways less—than their infinitely more successful competitors like Harrods and Barkers, where better goods at lower prices are obtainable. For the rest, the big postage increases will defeat their object and check trade—we shall send postcards instead of letters. We ourselves, and most other newspapers with big postal subscription-lists, will suffer, and the enormous increase in the parcel post charges will ruin many small traders. After all, it is little use blaming Mr. Chamberlain. On December 11, 1918, Mr. Lloyd George at Bristol told his hearers: "We propose to demand the whole cost of the war from Germany. . . . We shall search their pockets for it." To-day our pockets are being searched instead, and Fritz knows it and laughs at us! And Mr. Lloyd George, "in Paradise" at San Remo, laughs too, and asks, "Which is the Serpent?"

A perusal of the "National Building Code," issued by the National Federation of Building Trades Employees, the receipt of which we acknowledged a fortnight ago, leads us to the conclusion that it is not likely to facilitate building operations, and that not many architects will advise

building owners to sign it. It is too long and too diffuse for any but very large works. It is unreasonable to expect architects to give the contractor two copies of "such further drawings or details, or written instructions," either at his own expense or that of his client. The clause permitting the "reasonable substitute" of any material described is too vague, and is likely to be disadvantageously wrested to the benefit of the contractor at the expense of the client. The clause binding the architect to "define and fix all building lines and boundaries" may quite possibly be read as saddling the architect with responsibility for setting out the contractor's work, and is little likely to be accepted by any client well advised by his architect. The arbitration clause is too complicated, and is likely to frighten clients from building at all. Clause 24, which occupies a page and a-half, is so vaguely stated that we are not sure what it means; or how the quantity surveyor, when he has made up his mind what he is to do with regard to "provisional amounts," is to advise the architect. At its best, the new "Code" may serve as a basis for discussion. Any attempt to force its acceptance as it stands will result in the encouragement of "direct labour," or some kind of a "cost plus profit" system.

The Report of the Salisbury Committee on rents is on the whole a reasonable overhaul of the existing Rent Restriction Act, which expires for practical purposes at the end of June. The Committee propose that it be extended for three years, the estimated period of extreme house scarcity, and that during this time rents within the specified range may be increased by 40 per cent. Houses affected should be those up to a rental of £105 per annum in London, £90 in Scotland, and £78 elsewhere. Over the whole country the need for repairs is urgent, and their cost is deemed to be not less than two and a-half times what it was in 1914. Of the countless questions arising between landlord and tenant, there are two of special urgency. The first is: What of the tenant whose income has not increased since 1914, who cannot pay a higher rent, and who if ejected would, as matters stand to-day, be literally unable to find shelter? For him the Committee recommends special protection. The Courts should be empowered to refuse an order for possession, and also to reduce the rent. The second question is: Should

the tenant be compelled to pay the increased rent if repairs considered necessary are not carried out? In this case it is proposed that the Court should have power to suspend the increase or to order its payment into court. The suggested expedients under both these heads are salutary in intention, but in practice we are sure they will be beset with difficulty. The Committee, in plain terms, condemns the premium for possession as illegal. That may be difficult to enforce, but prevention should certainly be as rigid as possible.

There is not much to say about the 153rd exhibition of the Royal Society of British Artists. Few really good paintings, even in the Central Gallery, are to be found. "The Madonna of the Fields" (153), by the President, Mr. Solomon J. Solomon, does not attract us. Perhaps the best in the room is "The End of the Day" (154), by Mr. Hely Smith. "An English Beauty" (156), by Mr. David Jagger, R.A., is also good and sweet. Another of the best is Mr. Francis Black's "In a Sussex Garden" (188). We may also mention "Still Life" (186), by Mr. Horace Taylor; and "Richmond Bridge" (158), by Mr. A. Carruthers Gould. Among the more or less architectural subjects, Mr. W. Harding Smith's "South Ambulatory, Chichester Cathedral" (90), and his "Chichester Cathedral from the South" (97); Mr. Barry Pittar's "Royal Exchange, London" (107) and his "Staple Inn, Holborn" (113); Mr. Arthur E. Henderson's "North-West Tower and North Porch of Wells Cathedral" (281), have merit. Of the water-colours, among the best are: "The Riders" (16), by Mr. Otway McCannell; "On Farley Heath" (2), by Mr. A. E. Bottomley; "Reflections" (14), by Mr. E. W. Hazlehurst; "Dartmoor" (41), by Mr. T. L. Shoosmith; and "Beech—Beer, Devon" (10), by Mr. W. E. Riley, F.R.I.B.A., who also sends "Peace Celebration" (105), in the Albert Hall, and "A Victorian" (79), in oil, very characteristic of the female fashions of the time.

There appears to have been no justification for the recent statements in various papers as to the non-verticality of the Campanile of the Roman Catholic Cathedral at Westminster, but the scare caused in some quarters recalls a circumstance of some interest which happened

not many years ago in Victoria Street not very far from the site of Bentley's great church. Before the tall buildings on the north side of Victoria Street were completed, a block was erected at the corner of Great Chapel Street, which leads up to St. James's Park Station. As it then stood, this structure rose like an isolated tall tower overlooking the churchyard of Christ Church before the adjacent premises were built. The adjoining owner complained that this corner building was considerably out of the upright and oversailed his site. This complaint, after a series of surveys had been made by the surveyors employed by both parties, could not be verified by the use of plumb lines, owing to the great height of the fabric and the action of the wind on the lines. The permission of the Vicar by mutual agreement was therefore obtained, and a small platform of concrete was laid down in the churchyard to enable test sights to be taken by a theodolite. The result was curious, inasmuch as at one time the building in question proved to be perfectly vertical, and at other times certainly was several inches out of the upright. The surveyor, on obtaining such differing results, was enterprising enough to inquire as to the cause of such a discrepancy, and he examined a series of old maps of London. The result was remarkable, because he found that when an old well at Hampstead was full the building in Victoria Street sailed over, as described, and when the water level was low it assumed a vertical position. Having traced the watercourse from Hampstead through London to the Thames, he discovered that when the peat under the building was fully charged with water it tilted the structure over, and when the water was low it settled down again to the normal. Both parties consequently had no choice but to accept the inevitable, and they shared the expense of the inquiry. Since then the entire series of buildings have been completed, and, so far as we know, no further difficulty has been experienced.

Owing to the cost of printing, Hammersmith Council may follow Fulham's example and type instead of print its agenda. Newspapers next, as in New York?

Mr. W. J. Jennings, of Canterbury, has resigned the position of diocesan surveyor for the Canterbury Diocese, after holding the office for many years. He has been a fellow of the Surveyors' Institution since 1891.

Brigadier-General John Campbell, V.C., last Sunday unveiled a monument in Oswestry parish church to the local men who fell during the war. The monument, which was designed by Mr. Gilbert Scott, is of alabaster and marble, having St. George as the central figure.

At the meeting last week of the Milrow Council, Councillor Whitehead stated that the progress of his committee had been very largely interfered with as a result of the delay on the part of the Ministry of Health in dealing with the plans sent to them for approval or disapproval. The plans for the lay-out and street improvements in connection with their housing scheme were forwarded to the Ministry of Health in January last, and they were not sent back until the end of March. Even then those plans came back "very badly mutilated," and it was the opinion of the committee that the lay-out, which was most important, had in this case been spoiled.

THE "WINGET" SOLUTION OF THE HOUSING PROBLEM.

The drawback to concrete building on the poured or cast systems have undoubtedly prejudiced many against the use of concrete at all for house-building. Houses so built take a long time to dry; they are cold in winter and hot in summer; they not seldom sweat on the inside, and crack. They are inartistic, and generally costly. Building with concrete blocks has, speaking generally, been found much more satisfactory wherever due care has been exercised to ensure the necessary conditions of success. But where the blocks are made with unskilled labour *in situ*, in the rough-and-ready fashion too often seen when skilled direction is absent, it is generally found that too much haste meant least speed and no economy, and as ignorant public opinion tars all failures with the same brush, it is, perhaps, not to be wondered at that among the number of new methods and patent processes which have been so notably increased of late to meet the urgent demand for quick building at lowest cost some have disappointed expectations.

Twelve years' successful results have amply justified the opinion we expressed when we first saw it exhibited in England,

the fact that even the cheapest cottage need not be inartistic. No reason exists to-day why concrete houses and cottages of concrete blocks should not meet every requirement, from the artistic as well as the purely utilitarian point of view, to at least the same extent as houses built of brick, stone, or other material.

As regards cost, in actual practice the cost works out at from one-third to half the cost of labour in building brickwork. Quick erection means low cost—two vital points to be considered at the present time, in view of the urgent need for additional housing accommodation for the people. Winget, Limited, have a staff of demonstrators who are available for purchasers of their outfit. These demonstrators suggest the best lay-out for the machines, set them up, and instruct the local men in their use. Although this work is absolutely simple, the advantage of beginning on the right lines is obvious and avoids waste both of time and expense. Purchasers are, therefore, in their own interests advised to make a good start by availing themselves of the services of a demonstrator in order to attain success *right away*. The Government is employing a number of well-known architects to assist in solving the housing problem with



THREE "WINGET" COTTAGES AT SEDBURY.

that in the combination of a really scientific system of building in concrete with blocks, with the provision of machinery for producing the blocks cheaply and of perfect form and texture, the Winget System had come to stay, and that it had solved the secret of producing a good block of concrete, which is to mix it properly, and of concrete which is only just moist, because a block made of wet concrete will never be satisfactory. That our opinion has been so often endorsed by the highest authorities is well known. Perhaps the highest tribute was that paid by Sir Eric Geddes in the House of Commons, when, speaking of the houses built by Winget, Limited, he said, "I am assured by the Engineer-in-Charge that the system is actually cheaper to-day than woodwork or corrugated iron huts."

For all dwelling houses the continuous cavity system is acknowledged by every authority on the subject to be the best, the wall being composed of an outer and inner leaf with a continuous air space between. The insulating properties of the continuous cavity system entirely eliminate the possibility of dampness on the interior surface of the wall from rain and internal condensation. An absolutely dry house is guaranteed on this system; and one that will be cooler in summer and warmer in winter than a house built on any other system. Since questions of national economy must limit expenditure for many years to come, it is necessary to emphasise

the help of concrete blocks; and their housing schemes—already in existence—clearly show how unfounded is much of the old prejudice against concrete in the face of modern developments in constructional work. It may be added that for architects who prefer "rough-casting," "rendering," or "pebble-dashing," concrete blocks are more suitable than bricks, as the blocks are then usually "roughed" on the surface in process of manufacture in order to form a key, thus avoiding the difficulties often experienced in making rough-casting adhere to brickwork. Moreover concrete block walling on the "Winget" system is put up in half the time of that built of brick, the chief reason being that a 16 in. by 9 in. by 9 in. block is equivalent to ten bricks, and the labour in laying and jointing proportionately reduced. Further, special blocks are made for chimneys, quoins, cornices, etc., all of which add considerably to speed in building. Further saving is often effected, as concrete walls may be made much thinner than brick, to which may be added the saving in timber, shuttering and finishing. One "Winget" machine will produce all the slabs and blocks necessary for a two-story cottage covering an area of 400 square feet in four to five days, and will make the blocks and slabs for the floor and roof in two or three days more.

Under this system concrete house construction has long since passed the experimental stage, and Winget, Limited, can claim to have done more to solve the hous-

ing problem than anyone else, inasmuch as they have actually built hundreds of houses in various parts of the country. Upwards of ten square miles of buildings of every kind and description have been constructed with "Winget" concrete

country was built of "Winget" blocks for the workers of Messrs. Vickers, Limited, at Crayford, where the Crayford Cottage Society erected 400 houses on this system. These have proved so dry and comfortable that there is no difficulty in finding the

with which Mr. Gordon Selfridge is associated, and Messrs. Harrods, with their standard housing scheme, both of which firms are building with "Winget" blocks and slabs. Of these we give three illustrations, two of cottages built at Sedbury,



Architect: GORDON ALLEN, F.R.I.B.A.

GARDEN VILLAGE AT CRAYFORD.

400 Houses erected on the "Winget" system for the workers of Messrs Vickers, Ltd.

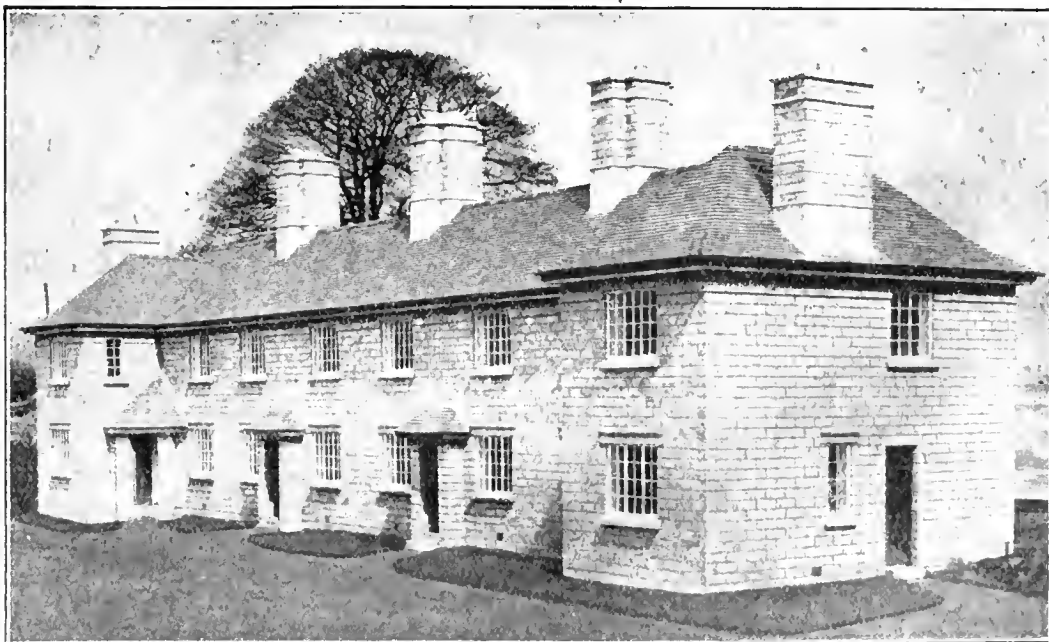
blocks and slabs in England alone during the past few years. Whole villages and model garden cities have been built entirely on this method, besides many handsome private and public buildings in all parts of the world.

Building on this method has made immense strides since the war, thanks to its

workers willing voluntarily to leave their brick houses for the new concrete ones whenever opportunity occurs. Sheffield's scheme includes 1,147 houses, the whole of the internal walls of which are being built with "Winget" blocks and slabs. The same system has been adopted at Bournville, as part of Messrs. Cadbury's

and another of the Garden Village at Crayford.

We should add that abundant proof has been given that the "Winget" system has been proved to be as equally advantageous for general building as for cottages and houses. In an interesting booklet published by the company two instructively



Architect: LEONARD MARIN, F.R.I.B.A.

COTTAGES AT SEDBURY.

Built with "Winget" Blocks and Slabs.

HOUSING SCHEMES ON THE "WINGET" SYSTEM.

official adoption both by the Ministry of Health and the Scottish Local Government Board, whose alteration of various by-laws in order to give it freer scope we have published. Needless to say, the "Winget" system has been fully approved by the Ministry of Health for State-Aided Housing Schemes. One of the first, if not the very first, concrete townships in this

new housing scheme; at Braintree, for Messrs. Crittall's workpeople; as well as at Walsall, Tilmanstone, Bullcroft, Chepstow, Hardwick, Bulwarks, Sedbury, Brighton, Linthwaite, Dormanstown, Yorkshire; and the Metropolitan Railway Country Estates at Wembley Park, Neasden, and elsewhere. To these may be added the Victory Construction Company,

contrasting illustrations are given of a hangar that was built by its system in three weeks as compared with another that took three months to erect in ordinary reinforced concrete. From the health point of view, as instanced by the good results obtained at the Admiralty Hospital at Chepstow, the gain is obvious. Perfect ventilation, heat insulation, and freedom

from damp walls are assured, and in this connection we may mention that all the interior walls of many of our largest and most modern hotels, colleges, etc., are made with solid "Winget" slabs, often only 2½ inches thick, and for all practical purposes the rooms are sound-proof throughout.

THE SOCIETY OF ARCHITECTS' LUNCHEON AT OLYMPIA.

The Society of Architects entertained a number of guests at luncheon at Olympia yesterday, at which it was hoped H.R.H. Prince Albert, who had visited the exhibition earlier in the day, would have been present, but his other engagements rendered it impossible.

Mr. E. J. Sadgrove, the president, in proposing the health of "Our Guests," said that unless the architect was familiar with the latest inventions and appliances connected with building progress could not be made, and that the exertions of the Society of Architects had contributed materially to the success of the exhibition.

The toast was seconded by Sir Charles Ruthen, and responded to by Sir Kingsley Wood, Mr. Walker Smith, and Mr. J. R. Gibbon, of the Ministry of Health.

The toast of the "Society of Architects" was proposed by Sir Alfred Mond and responded to by the Chairman.

The issue of the Fireproof Wood (Oxylene) Manufacturing Co., Ltd., has been over-subscribed, and letters of allotment and regret will be posted in due course.

Dr. Addison, M.P., has decided to sell his house at Northwood, Pretty Corner, and Messrs. Knight, Frank and Rutley will offer it by auction in June.

As a memorial to Catholics who have fallen in the war a church, to cost about £30,000, is to be erected in Aldershot Camp. This will replace the old wooden chapel which has done duty since the Crimean War.

"There is a common saying in America," says the Rev. P. Clement Smith, the well-known City rector, "that trying to do business without advertising is like a man winking at a girl in the dark. He may know it, but neither she nor anybody else does."

The Tonbridge Council have decided to adopt the plan of employing direct labour in the local housing scheme. It was reported at a meeting of the Council on Saturday that the scheme was being delayed by prohibitive tenders, and by direct labour it is hoped to save £200 per house.

There are reasonable prospects, it is believed, of the establishment of a great glass-making industry at the ancient town of Okehampton on the border of Dartmoor. Obtainable material from granulate is estimated to cost 15s. a ton instead of £2, with enough output for all home consumption, and a liberal margin for export.

Mitchells Fold, a Druidical stone circle on Staplefield Hill, on the Shropshire-Montgomeryshire border, has, through the influence of Sir Offley Wakeman, been handed over to the Office of Works for preservation as an ancient monument. The circle measures 92 ft. from north to south and 86 ft. from east to west, and the principal stones are 6 ft. high.

Sir John Jackson, C.V.O., LL.D., F.R.S., of Henley Park, Henley, Oxon, and of 48, Belgrave Square, S.W., head of Sir John Jackson, Limited, and a director of the Dover Cliffe Land Company, Limited, M.P. for Devonport 1910-18, who died on December 14, 1919, aged sixty-eight, left property now valued for probate at £520,474, with net personalty £504,674.

Country Life tells a story of two very modern English doctors who, during a visit to Palestine, watched people collecting water from the Jordan in order to carry to England for baptismal purposes. It came into their heads to analyse this water, and they found it full of malignant microbes, whereupon they filled a bottle with it in order to show those at home the true nature of Jordan water. The vessel was in due time opened in a lecture room. But alas and alack-a-day! It was found that the water was pure and clear—the microbes had lived on one another till none was left—or was it a "miracle"?

Our Illustrations.

SOUTHAMPTON WAR MEMORIAL.

This drawing, lent us by the architect, Sir Edwin L. Lutyens, R.A., was shown at the Royal Academy War Memorials Exhibition. It illustrates the front facing the road, and the side elevation. In front on a stepped platform stands the great war stone. The cenotaph is about 50 ft. high from the ground line. The plan in the margin shows the lay-out of the scheme, which speaks for itself. The names of the fallen are intended to be inscribed on the front and side faces of the pedestal.

THE ENTRANCE HALL, "THE WOODLANDS," HARROW.

Part of the encircling gallery has been removed in this perspective to allow of the coved lantern light being seen to show its enriched plaster work and also the fret-cut and carved panels of foliage ranging round the balcony. Mr. George P. Bankart designed and carried out the work, and this drawing was hung at the last Royal Academy Exhibition.

NEW PREMISES AT CASABLANCA, MOROCCO, FOR THE BANK OF BRITISH WEST AFRICA, LTD.

This building is now in course of erection, in the Rue du General Drude, Casablanca, and has a frontage of about 24 metres. The ground floor will be occupied by the bank; there are mezzanine galleries on either side also occupied by the bank, and on the same level are offices to let. The bank's strong-room, and document, book, and stationery rooms are in the basement. The first and second floors will be let off as offices, and the third floor is taken up by two flats for the use of the chief bank officials. The main framing of the building is of reinforced concrete. The architects are Mr. H. G. Holt, A.R.I.B.A., London, and M. Georges Vimort, S.D.C.A.D.G., Paris and Casablanca. At an early date we shall publish a view of this building.

LEGAL INTELLIGENCE.

ALLEGED SLANDER BY AN ARCHITECT.—From the *Irish Builder* we abstract the following report of an action by Mr. John Curtin, builder and contractor, Cork City, against Mr. Bartholomew O'Flynn, engineer and architect, Cork City, for damages for the suppression by defendant of plaintiff's tender for the execution of certain building works for the Lee Motor Company, and also for damages for slander.—The case for the plaintiff was that he had been connected with the building trade since he was a boy, and since 1913 he had carried on the business of builder and contractor. In September, 1919, he met Mr. D. Curtin, a director of the Lee Motor Company, who showed him plans for some building work to be carried out at the company's premises at 4, Merchants' Quay, and asked him if he would tender for such work. Plaintiff consented to do so. When the advertisement inviting tenders was published, plaintiff went to the office of the defendant, who was the architect over the work, and asked him for the plans and specification of the proposed work at 4, Merchants' Quay. Defendant said there were two copies out, and if plaintiff called back in the evening he could have them. Plaintiff did so, and defendant's clerk gave him the plans and specifications, and plaintiff took them away. Plaintiff prepared a tender for the work, and having sealed it, lodged it in defendant's office. The tenders received for the work were to be considered on October 5, 1919. Before lodging his tender in defendant's office plaintiff had shown the sealed envelope containing it to Mr. D. Curtin, who was no relation of plaintiff. When Mr. D. Curtin and Mr. R. Walsh, another director of the company, went to defendant's office and asked for the tenders that had been lodged, defendant handed them four envelopes. Mr. D. Curtin noticed that the envelope he saw with plaintiff was not amongst the four envelopes, and he asked defendant if he had not a tender from the

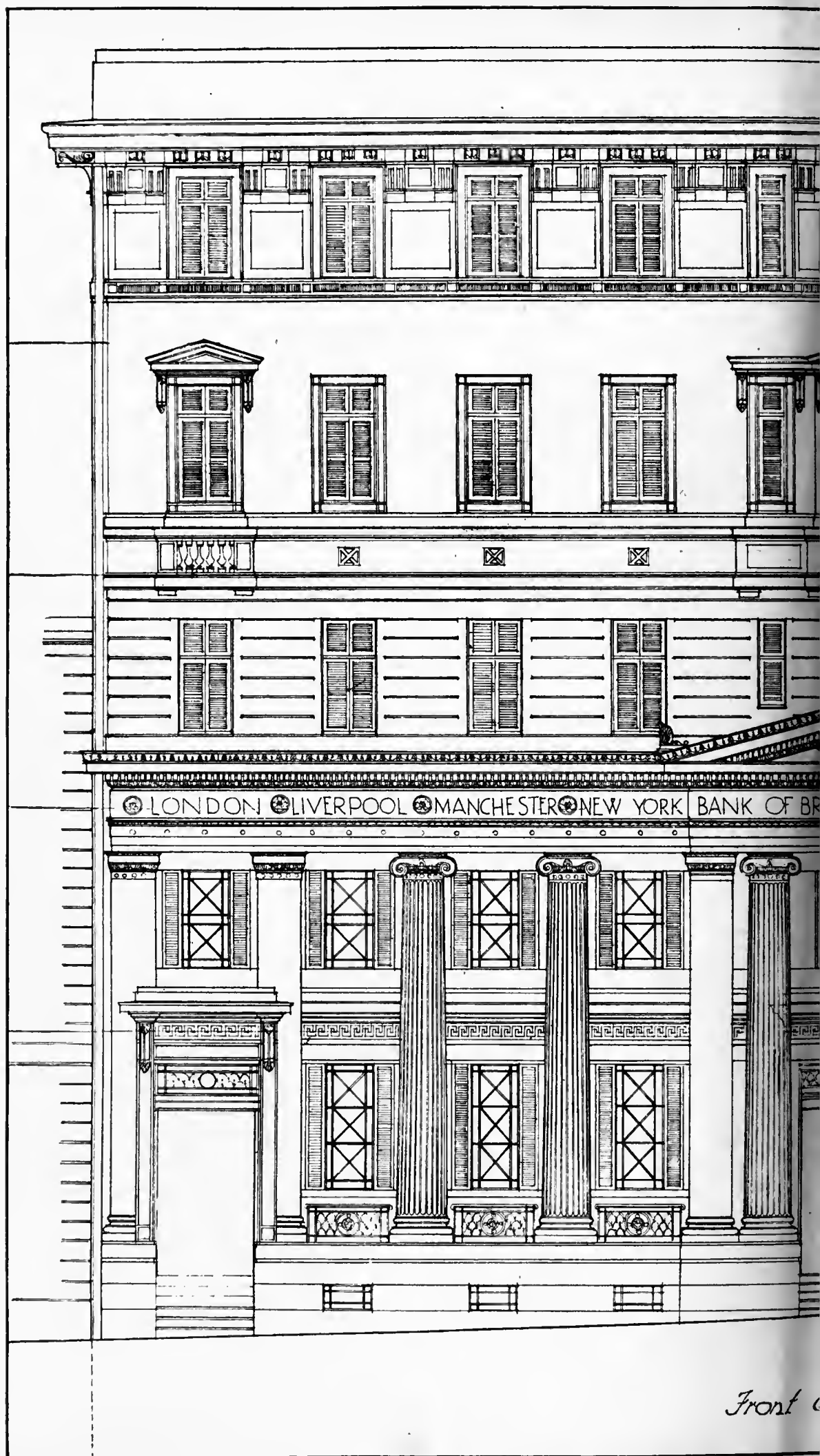
plaintiff. Defendant said he had refused that tender. Mr. D. Curtin then said, "On what grounds? I thought he was a builder, and got the plans and specifications," and defendant replied, "He is not a builder; he is only a plasterer." Mr. D. Curtin then said, "What are any of your builders in Cork? I venture to say very few of them could put one brick on top of another." When Mr. D. Curtin pointed out that plaintiff was a builder and had a big job on hands, defendant said, "Let him join the Builders' Association and he can tender." Defendant also said to Mr. D. Curtin that if any tenders were considered outside what he had given to them he would not act as architect on the work.—Mr. Lynch asked for a direction on the ground that there was no evidence of malice, and that it was a privileged occasion.—His Lordship said he thought at present there was some evidence of malice.—The case for defendant was that there was a Builders' Association in Cork, and no man could be a member of it except he was accepted as a suitable person. There was also an arrangement with the Builders' Association and the Architects' Association whereby the architects would not allow outsiders to come to competition with members of the Builders' Association in works under the care of the architects. Defendant drew up plans and specification for the work that the Lee Motor Company required to have done at Merchants' Quay, and four tenders were received for the work, three from members of the Builders' Association and the other from plaintiff, who was not a member of the Builders' Association. Defendant told the two directors of the Lee Motor Company, who came to him for the tenders, that he could not act as architect over the proposed work if the company allowed a non-society tender to come into competition with society tenders, that he was ready and willing to act as architect if the company took either set of tenders, but he could not act if they took both into competition. Defendant only knew plaintiff as a plasterer, and that was all he said about him. Defendant acted most impartially as between his own employers and the plaintiff. It was also stated by defendant that he had recently given plaintiff some plasterers' work. He informed the directors of the company that if they considered non-society tenders they should return to him unopened tenders of the Master Builders' Association, as it was on such a condition that he obtained the latter tenders. Defendant never made any reflection on plaintiff except that he believed he was not as competent as other competitors for the work.—His Lordship pointed out to the jury that the action should be confined to one of slander, because there was not one particle of evidence that defendant withheld the plaintiff's tender for the work required to be done for the Lee Motor Company. That charge, which was the serious charge, was utterly unfounded. The main question for the jury was as to whether the words "he is only a plasterer" were spoken maliciously by the defendant on an occasion that was highly privileged. Did the defendant tell what he believed to be true? Plaintiff was a very decent man, who was getting on well, and he trusted he would get on better in the future. Plaintiff, however, never did any real building work, and defendant knew him to be a plasterer. If defendant uttered the words believing that plaintiff was a plasterer, they should find for the defendant; but if the defendant invented the words, and spoke them maliciously, they should find for the plaintiff. He would leave the following questions to the jury:—(1) Did the defendant use the words "he is only a plasterer"? (2) Did the words mean that plaintiff was not competent or qualified to carry out the building works or contracts, and was not fit to be entrusted with such building works or contracts? and (3) Were the words spoken maliciously?—The jury answered the first question in the affirmative, and the second and third questions in the negative.—Judgment for defendant was accordingly entered.

Mr. S. Mathew, assistant engineer and surveyor to the Chelmsford Town Council, has been appointed borough surveyor of Wisbech, at a salary of £375.

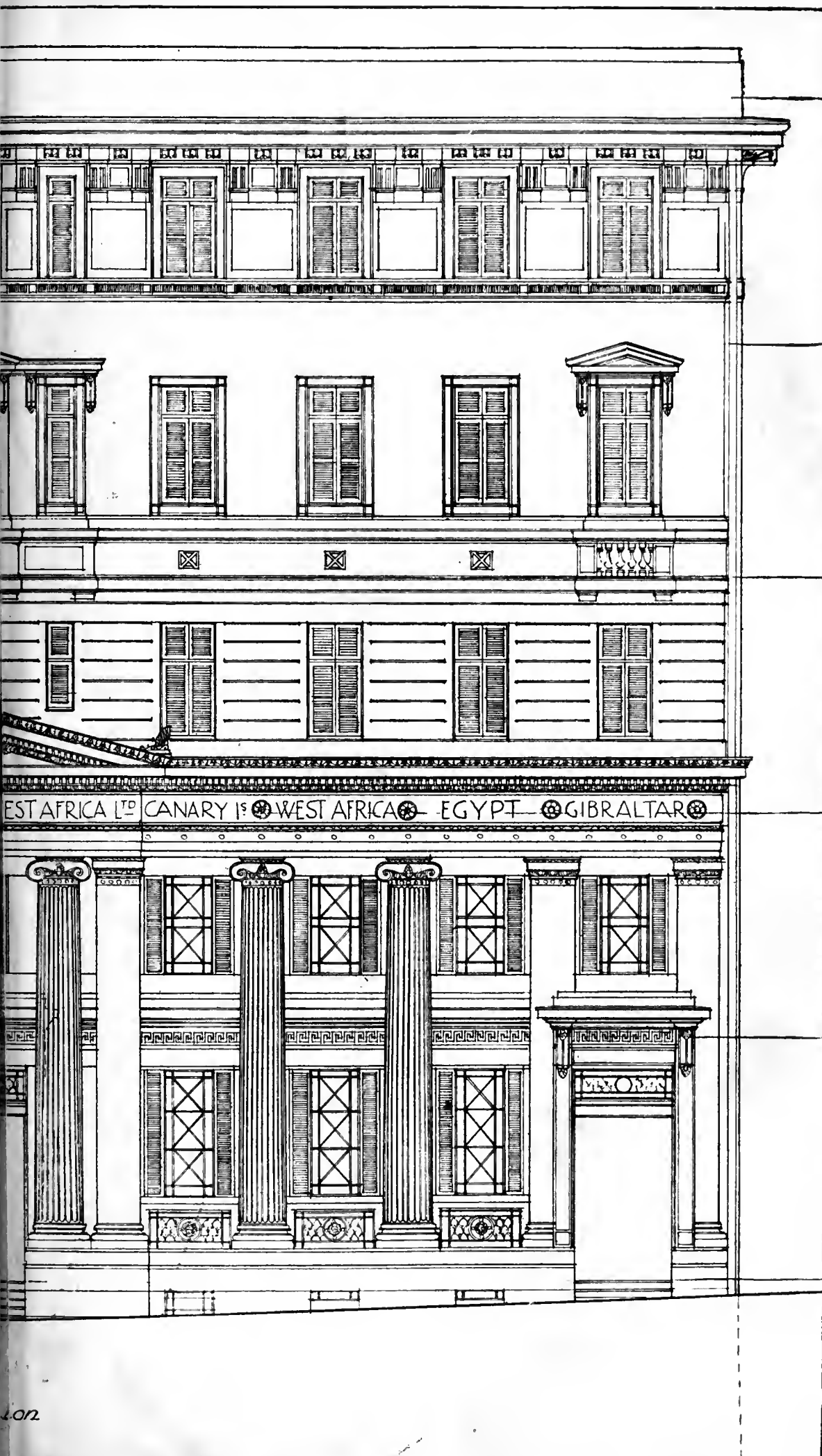
The estate of the late Mr. John Mackintosh is described as "a quarter of a million from toffee." Good toffee, doubtless, but what would the sales have been without its enterprising maker's good advertising?

The first exhibition of the British Institute of Industrial Art will be opened on May 31 at 217, Knightsbridge. It will comprise, in the trade section, textiles, wallpapers, furniture, pottery, glass and metalwork, and in the craft section building and other crafts. All works intended for exhibition must reach the Institute by May 8.

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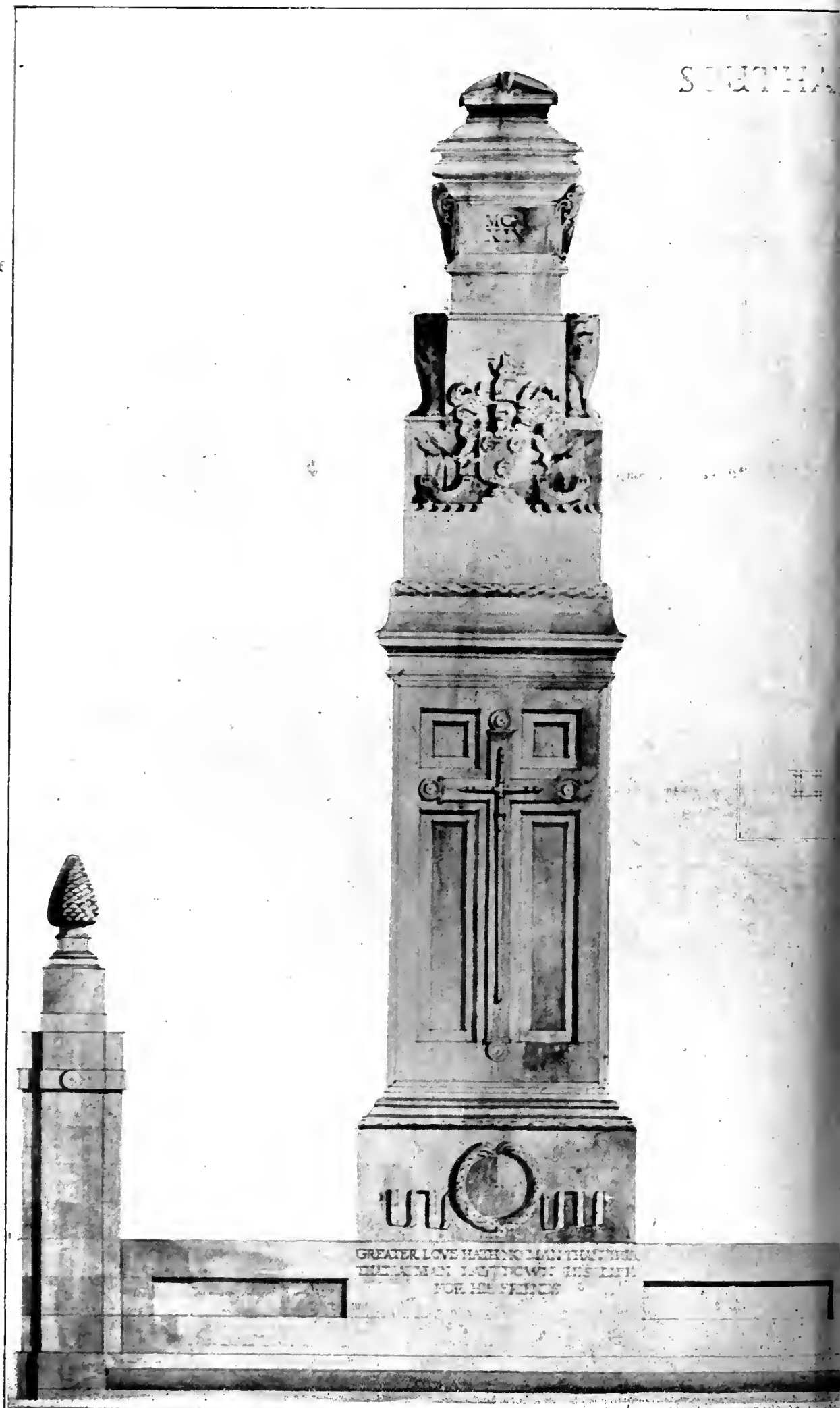


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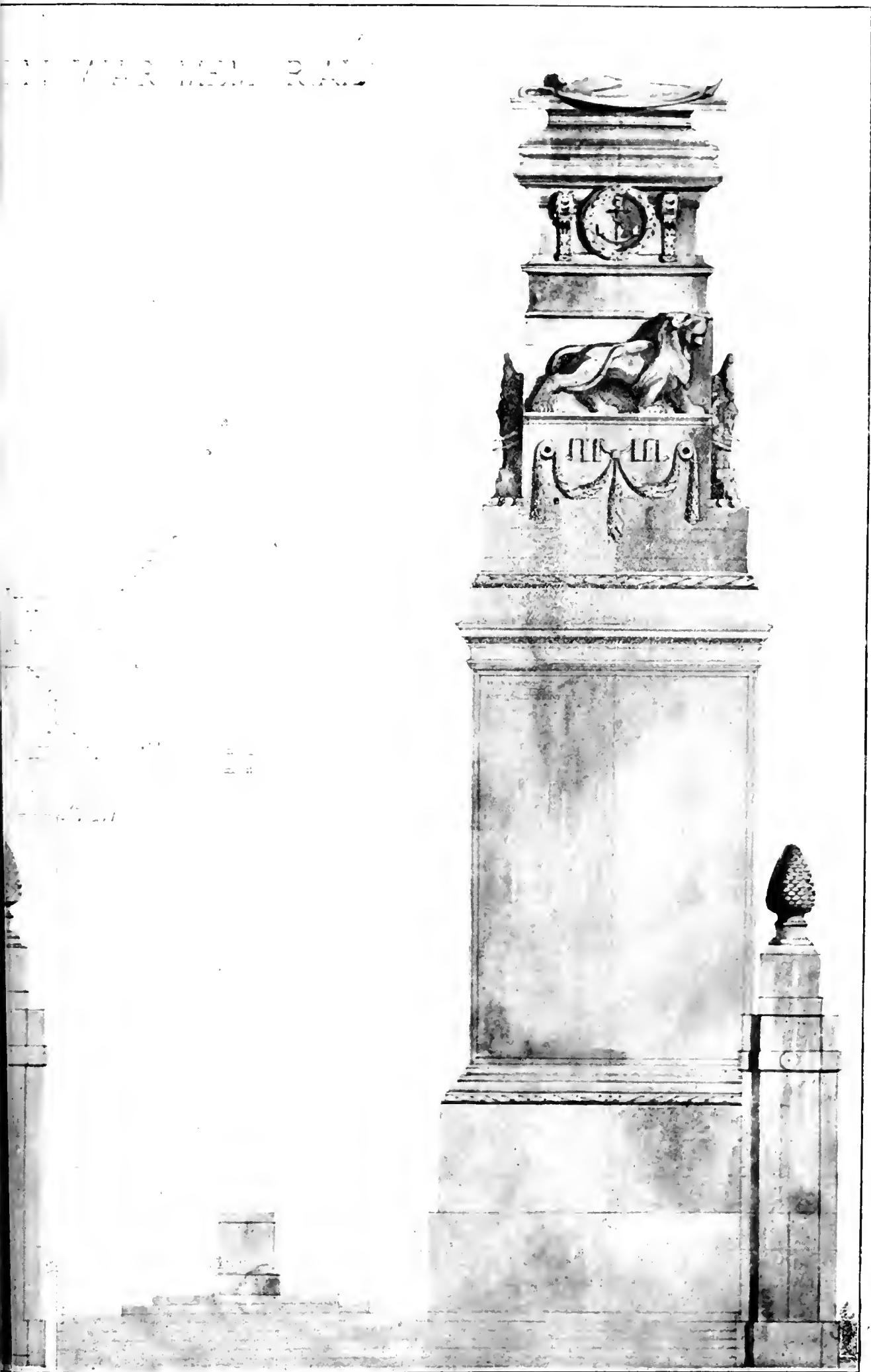


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SOUTHAMPTON



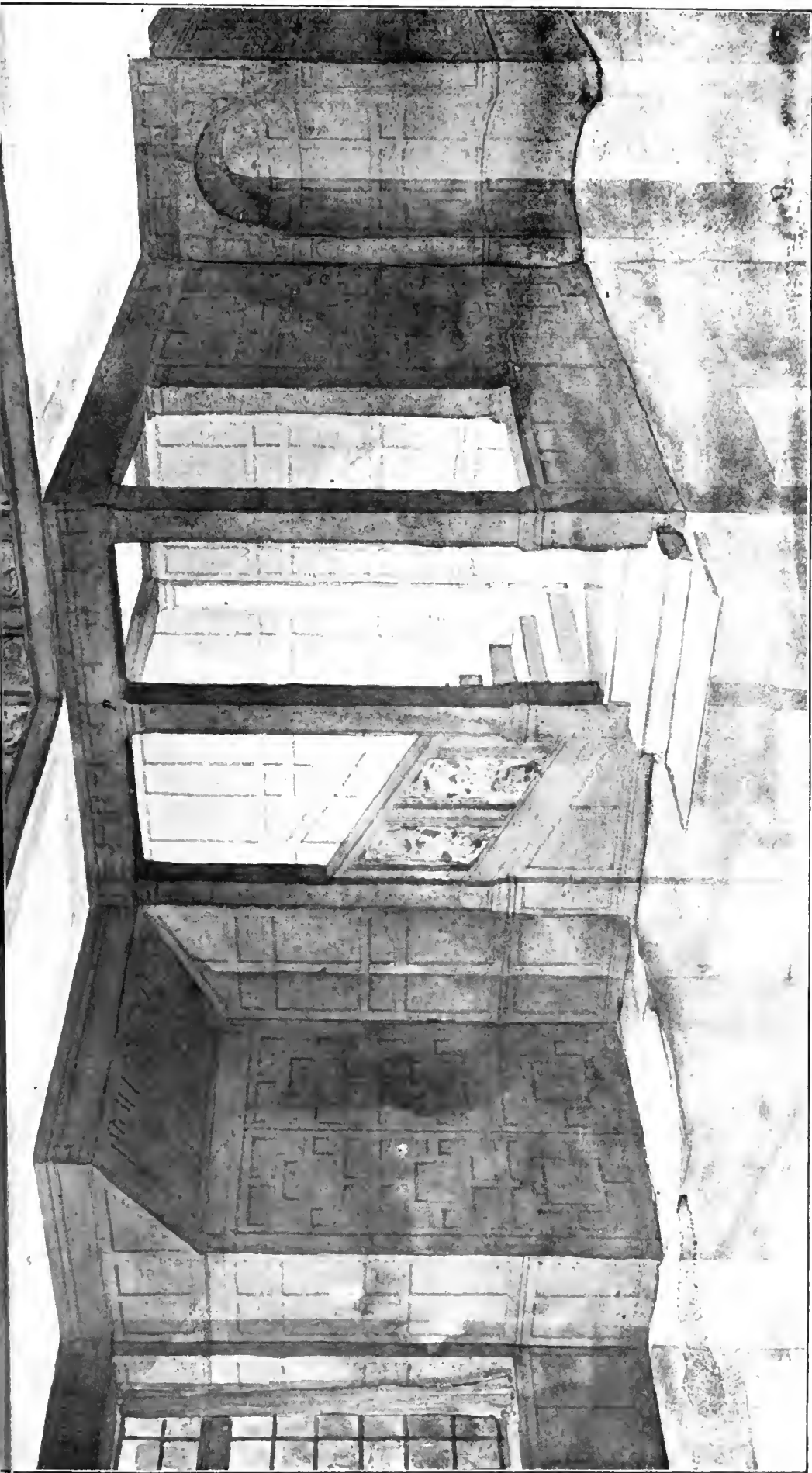
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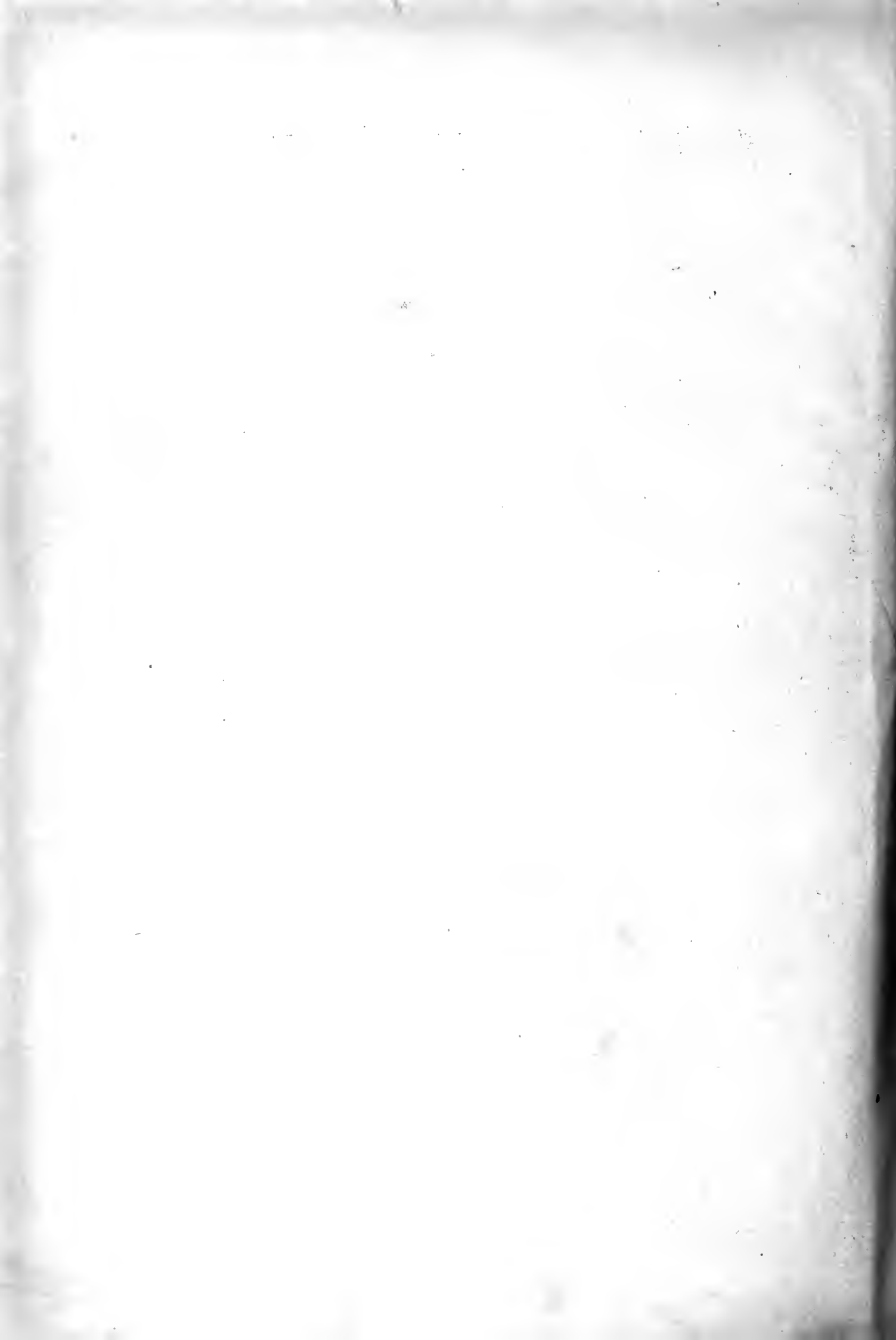
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THE BUILDING NEWS, APRIL 23, 1920.





THE ENTRANCE HALL, "THE WOODLANDS," HARROW.
MR. GEORGE P. BARNART, ARCHITECT.



PROFESSIONAL AND TRADE SOCIETIES.

ARCHITECTURAL ASSOCIATION OF IRELAND.—On April 13 a lecture on "The Future of Architecture" was delivered by Professor A. E. Richardson, F.R.I.B.A., Principal of the School of Architecture, London University. The lecturer said that to the architects of to-day had fallen the Herculean task of reformation. In these days it became necessary to encourage a study of the underlying principles of Gothic architecture, but, regarding the future, they would not find the solution of problems in the exploitation of any one style or any particular fashion. They might well ask how did tradition attend the subject of domestic architecture. Nevertheless it did, and that in a peculiar way. During his travels in Ireland, Scotland, and England he had kept his eyes open to many things. He had seen the stone-fronted and sashed windows of Newry, the eighteenth-century brickwork of Belfast, and the strait-laced eighteenth-century brick coats displayed in the squares and streets and along the quays of Dublin. The long, low cabins of Galway and Donegal had arrested his attention. In Dublin he saw a reflex of London, in Kingstown and Cork an echo of the stucco-fronted houses of Cheltenham and Tunbridge Wells. He had looked upon those buildings as excellent motifs, not for the internal arrangements, which left much to be desired, but for the idea of breadth, simplicity, and appropriateness to the scenery. What a book could be compiled from the country buildings of Ireland, and what a magnificent sermon could be preached regarding the beauty of direct statement those buildings showed! Much had been done to improve housing conditions in country districts. Still more remained to be accomplished by the artists who had little reason to be ashamed of the magnificent traditions of the national architecture. The cottage tradition of Ireland clung to the bungalow type—it was a tradition shared by the cottager in Scotland and the smallholder in the West of England. If the bricklayers, speculative builders, carpenters, and plasterers of the eighteenth century, working under the influence of the leading architects, but more often led by the doctor and the lawyer, could produce such magnificent arrangements of doors and sashed windows as those enriching Dublin, why was it not possible for the tradition to be extended to-day? No, the demon of unrest had seized them; they felt compelled to express themselves. While advocating the adoption of universal tradition for civic architecture, he would have designers study the necessities of localities. There must be the architecture of the city, with its various divisions, ranging from the civic centre to the commercial and educational quarters, and the districts of the professional classes, the various residential centres, and from those to the suburbs. The type of buildings suited to country towns must be studied, also the especial or regional types of domestic buildings suited to the village, or to the purposes of farms or small holdings. Nothing expressed the character of a nation more than the aspect of its buildings. It was from the seemingly stern façades that they obtained their best and lasting impressions. When he visited Dublin he found the welcoming smile still apparent on her classical features. Her character needed study; she must not be judged too hastily by visitors; she had a perspective and a venerable past portending well for the future; her traditional buildings were not dead or meaningless. In the architecture of Dublin was reflected the soul of the national tradition. It was England, Scotland, and Wales once again, a pale-tinted reflex of the classic of antiquity, half suggesting the inspiration of the future and embodying the essence of the classic spirit.

NOTTINGHAM AND DERNY ARCHITECTURAL SOCIETY.—By invitation of the Council of the Nottingham and Derby Architectural Society, and at their rooms, a second conference with the Councils of the Master Builders and Operatives was held on Tuesday, April 13. The president of the Architectural Society, Mr. Watkins, occupied the chair. Mr. Bosworth (president), Messrs. Cree and Gilbert (vice-presidents), and their Council repre-

sented the Master Builders' Federation. The delegates of the operatives included Mr. Council Green, president of the Nottingham Branch National Federation Building Trades Operatives Amalgamated Union; Mr. Guy, secretary, and a representative of the bricklayers, plasterers, stonemasons, plumbers, machinists, joiners, and slaters. In welcoming the delegates, Mr. Watkins stated that owing to the decrease in numbers of operatives in the building industry owing to losses due to the war and stoppage of normal apprenticeship, there was a serious shortage of labour at the present time, and he asked the operatives that, while protecting themselves against injustice, they should carefully consider the necessity for bringing in ex-Service men after short training, commonly referred to as dilution. With shorter hours, work was not being completed quickly enough, and this delay meant less output of industries, which shortage kept up prices. They were not yet catching up arrears of work caused by Government stoppage during the war. He referred to the present high cost of building and the difficulty of obtaining firm prices in tenders, which deterred many people from building and extending their premises, and invited the opinions of those present. In conclusion, he stated that in other large cities mechanical diggers and other labour-helping plant were used to expedite the work, and suggested that the master builders might combine to purchase such plant to be hired out among themselves. The opinion of the operatives was strongly against dilution, although it was stated that the number of men in the building industry was about 150 to 200 thousand below pre-war total. Several delegates stated that three years was not sufficient to train any craftsman; that it would, therefore, bring in a number of unskilled workmen; and that when work slackened it would increase the evils of unemployment, although authorities were quoted that it would take at least ten years for the building trade to become normal, and Mr. Watkins informed the meeting that the architectural profession had assisted ex-Service men into their profession and relaxed examinations and periods of training, as they did not fear any adverse results to themselves.—The president of the operatives said that while he constantly advocated that wages should be sufficient for every man to live up to a reasonable standard and hours of relaxation enough for him to enjoy the life God gave him, he had always urged that a man should put his heart into his work and do his best—in fact, do an honest day's work, and he hoped the idea that the trades-unions' limited output was exploded for ever, because it never existed. The master builders said they would consider Mr. Watkins' suggestion as to plant, but the difficulty would be to obtain it at present. They pointed out that it was impossible for them to quote firm prices as long as the manufacturers insisted upon charging the price to them at the date of delivery and not at the date of order, due, as they claimed, to the uncertainty of the labour market. They also pointed out that clients who built were protecting themselves by similar means in their own businesses. Discussion took place with reference to the fresh restrictions on buildings and while admitting the necessity for houses, it was felt that it was only common sense that industrial buildings, which together with all other buildings had been restricted, should now be allowed to proceed in order to increase production and help to provide employment in other industries, and they felt that all buildings, with the exception of cinemas and other real luxury buildings, should not be interfered with. The Government type of house and the cutting down of the architects' original designs was severely criticised.

The Salford Guardians have offered part of the workhouse to the Housing Committee for conversion into tenements. The workhouse has now only 400 inmates, with accommodation for 2,000. We know nothing about Salford, but we know other workhouses—we beg pardon, "institutions"—where the officials outnumber the inmates, and have easy times of it at the cost of the ratepayers.

OBITUARY.

Mr. Briton Riviere, R.A., who died early last Tuesday morning, was born in London on August 14, 1840. He was of French descent, although four generations of his family have been on the Academy books. The first eight years of his life were spent in the metropolis, but in 1848 his father accepted the position of senior drawing-master at Cheltenham, and it was within the walls of that college that the future R.A. received his early education. Subsequently he proceeded to Oxford, where, however, he devoted practically the whole of his time to art, with the result that he had passed his twenty-seventh birthday before he took his B.A. degree. He was elected A.R.A. in 1878, and R.A. in 1881.

We sincerely regret to record the death, on April 17, at his residence, Oak Dene, in his eighty-first year, of Mr. James Gandy, one of the oldest and most widely esteemed quantity surveyors of his time. Mr. Gandy was born in London in 1839. He commenced his professional career as a quantity surveyor with Mr. Charles Poland in 1855, and after being associated with this gentleman for some years—notably in the preparation of the bills of quantities for the new Royal Courts of Justice—he started practice as a quantity surveyor in 1869. He had an extensive practice as an architectural surveyor, having, under the late George Edmund Street, R.A., been engaged in most parts of the United Kingdom on his numerous churches, restorations and other works including the Royal Courts of Justice from the time the superstructure of that building was commenced. He also acted as surveyor to Mr. Thomas E. Colcutt, and prepared the quantities for the Imperial Institute, Wakefield Municipal Buildings, Lloyds' Register of Shipping, new P. and O. offices in Leadenhall Street, rebuilding of the Savoy Hotel, etc. Mr. Gandy had also at various times prepared quantities for buildings designed by Mr. Ingress Bell, Mr. J. J. Stevenson, Mr. Harry Redfern, Mr. A. N. Prentice, and other eminent architects, and he had also acted as umpire and otherwise on various arbitration matters connected with the building trade. He retired from active practice in 1913, but retained his interest in his firm of Messrs. Gandy, Benison and Faux, who will continue practice at 48, Essex Street, Strand, W.C.2. The funeral service was solemnised on Wednesday at Christ Church, East Sheen. We gave a portrait and short biography of Mr. Gandy in our issue of October 31, 1890.

The late Mr. Andrew Carrick Gow, R.A., Keeper of the Royal Academy, who died on February 1 last, aged seventy-two years, has left estate of the gross value of £10,269, net personally £9,980.

At the London Sheriff's Court last week, Miss Lily Brown, a draper's assistant, of Chestnut Grove, Balham, was awarded £65 damages against George Horner, a house decorator, of Gordon Road, Clapham, for breach of promise of marriage.

At a reception in the County and Borough Halls, Guildford, last week Major Crawford, Liberal candidate for North Walthamstow, said that at the present rate of providing the necessary houses the Government, if they had commenced operations at the time when Moses viewed the Promised Land from Mount Pisgah, would not have obtained the number now necessary.

The London Society, encouraged by the success which met its production, after three years' work, of a map showing what Outer London might become under a combined effort at development and town planning, has now decided to bring out a map suggesting improvements which could be carried out in the already built-up portion of London, and the work is now in progress.

Mornington Crescent is to disappear after all. The ground, which is 2½ acres in extent, was purchased for building purposes by Mr. F. G. Minter, of Putney, but he offered it for sale to the St. Pancras Borough Council, which, after three months' consideration, has declined to purchase, and Mr. Minter has decided to proceed with his building scheme forthwith. He intends to rebuild the houses surrounding the crescent, and hopes to erect commercial buildings on the present open space.

STATUES, MEMORIALS, ETC.

THE LATE HARRY HEMS.—At the Easter vestry meeting of St. Sidwell's, Exeter, the Rector said he had received a letter from Mr. H. T. Hems, stating, on behalf of his brothers, sisters, and himself, that, as a rood-beam had been rejected as a memorial to their parents, they would like to erect some other form of memorial in the church. They suggested a vestry screen, with suitable inscription, which would take the place of the existing varnished panel at the east end of the north aisle. "It must be clearly understood that this memorial is in place of the rood-beam."—The Chairman said he could not accept the statement that they had rejected the offer of the rood-beam. It was accepted by the vestry, and a faculty applied for in his predecessor's time, but the application was refused. The present was a generous offer, and the design a very beautiful one. It would be necessary, if the offer were accepted, to have a special vestry meeting to apply for a faculty.—Mr. A. J. Lucas moved that application be again made for a faculty to erect the rood-beam, and that consideration of the present offer be deferred until the result of the application became known.—Mr. W. M. Pile, in seconding, said the rood-beam was worth at present prices more than £1,000. For the sake of those who came after them, they should seriously consider before finally losing a work of art worth over £1,000.—The Chairman, in reply to a question, said he considered the suggested screen was worth from £300 to £500. Personally he did not think there was the slightest chance of a faculty being granted in respect of the rood-beam. The present Chancellor was more determined in these matters than was the late Chancellor. Another point to be remembered was that such an application would cost money.—Mr. Lucas: Will not the Enabling Act enable us to do as we like in our own church?—The Chairman: No.—Mr. Pile suggested that it might be possible, under the Act, for the National Assembly to promote a Bill which would do away with Chancellors and put people more broad-minded in their places.—The Chairman replied that might be so, but they had to take things now as they found them.—Mr. Shepherd thought it a pity to bring up the rood discussion again. They now had a splendid offer. He moved that it be accepted, and that the clerk send a letter thanking the Hems family

for their generous offer.—Mr. Panter seconded, and Mr. Lucas withdrawing, this was agreed to. A special vestry meeting will be held for the purpose of applying for a faculty.

CADMORE END.—At this Buckinghamshire village the War Memorial to the villagers who fell in the war is a bronze and silver cover for the font in the church, and has been designed by Miss K. Shaw, an Irish sculptor, who not only offered to design the memorial, but to carry it out as a labour of love. The silver was contributed by the villagers themselves, and there was hardly a cottage but gave an old coin, thimble, vase, or medal to be melted down. A figure of a woman, in silver, which surmounts the memorial was modelled from a mother of Cadmore village, and the original of the infant in her arms was a village child.

PETERBOROUGH.—At the Easter Vestry last week the Vicar said, with regard to the War Memorial, the committee appointed, after considering the matter, had come to the scheme of a shrine with two wings and a figure of our Saviour in the centre, which would be of plaster heavily covered with copper. It was proposed to put it in the corner of the north transept of the church. The cost would be between £40 and £50, and he thought what they had in hand would cover the cost. Mr. Baynes had drawn the design and Mr. Hanson was responsible for its inception. The Vicar said it was proposed that electric light be used in the church instead of gas. In comparing St. Mark's with St. Barnabas, he had found that they had spent more on gas and mantles at St. Barnabas than they had on electricity at St. Mark's, and when they remembered the greater number of services at St. Mark's it was a consideration. It was agreed that the Church Council be instructed to carry out the scheme of electric lighting as soon as possible.

WOODSTON.—The dedication of the new Memorial Lych Gate at Woodston Church, erected to the memory of the men from the parish who fell in the war, took place on Saturday week noon. The Lych Gate is designed by Mr. H. F. Traylen, architect, of Stamford, and the work has been carried out by Messrs. Thompson and Company, of Peterborough. The special features are figures of the Good Shepherd facing the roadway, and of St. George with the slain dragon facing the church, together with two bronze tablets facing the roadway, one on either side of the entrance,

with a statement of the *raison d'être* of the Lych Gate and the names of the fallen heroes of the parish. The roof is of Collyweston slates, and the remainder of English oak. The depth is 7½ ft. from back to front, and the gateway is 5 ft. across.

TWERNE MINSTER.—The War Memorial at Twerne Minster in memory of the men and women of the two villages who lost their lives in the war was dedicated on Monday. The memorial was designed by Mr. Gilbert Scott, and stands on an open triangular site in the village. It is carried out in Douling stone, and consists of a tall shaft on a wide spreading hexagonal base of steps and a seat. The socket stone has three main faces, and into these are let tablets on which are cut the names of the fallen, surrounded with a border of carving. On the lower part of the shaft itself, and facing the main road, is carved the figure of a soldier, in a niche, standing with reversed arms. The top of the shaft is treated somewhat in the manner of the ancient example at Stalbridge, and consists of richly carved tabernacle work, with three open niches, surmounted by a crocketed pinnacle. The niche on the principal face contains the figure of Our Lord on the Cross; while the other two niches are occupied by figures of St. George and Joan of Arc.

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

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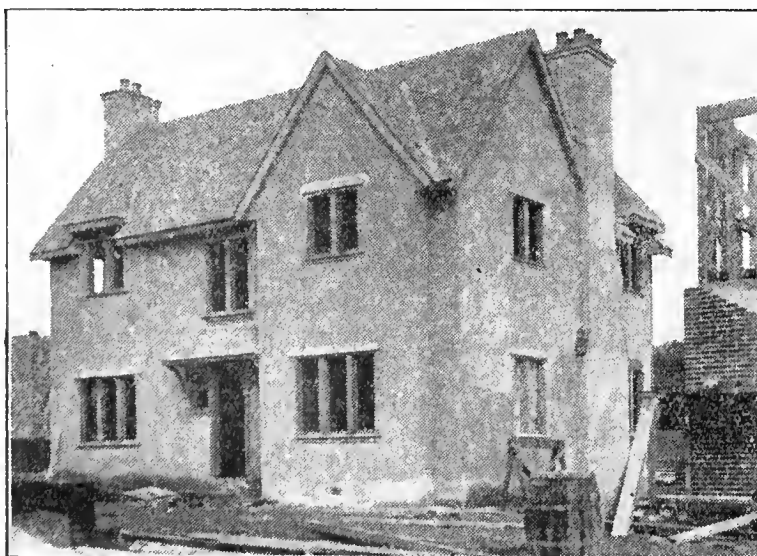
Mr. Frank O. Salisbury has painted a historical panel for the Royal Exchange commemorating the Peace thanksgiving service outside St. Paul's last July, commissioned by Sir Horace Marshall.

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THE BUILDING NEWS

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OUR ILLUSTRATIONS.

Regent Street Quadrant, London, as rebuilt. Messrs. Sir Reginald Blomfield, R.A., Sir Aston Webb, P.R.A., and Ernest Newton, R.A., Architects.

Interior of Ballroom, Imperial Delhi. Sir Edwin L. Lutyens, R.A., Architect.

Flint House, Goring, Oxfordshire. The Entrance Front. Mr. Ernest Newton, R.A., Architect.

Currente Calamo.

Dr. Addison was evidently savage last Saturday at Southgate with the poor subscriptions to the Housing Bond issue, which was a "disgrace," especially to the London County Council; and with architects who talked "rubbish" about the unemployment in the building trade resulting from his ukase against "unnecessary building." His only good word was for the Southgate Urban Council, which wants to build and sell houses to occupiers if the Ministry of Health will give the Council a subsidy of £150 or £160 for each house built, provided the necessary capital could be raised. It "would require an alteration of the law," Dr. Addison said, but "he was considering the question in a very friendly spirit." We advise all applicants under the "alteration of the law" to beware of the gifts of the Greeks! The Housing Act enacted that "all the expenses have to be discharged by the Government except the amount realised by a 1d. rate." True, the Act of Parliament plainly so provides, and equally true that members of the Government have emphasised that point in their speeches. It is, however, equally true that both the Act of Parliament and the declarations of Ministers have been deliberately overriden by the Regulations made by the Minister of Health and approved by the Treasury. Those Regulations provide that a local authority shall submit an estimate of the average annual loss over a period of years, which, after 1927, will be for a period of ten years. The Exchequer subsidy is based upon that estimate, and is the estimated average annual loss, less the amount realised by a 1d. rate. If the loss in any year is more than such estimated average annual loss, the local authority has to pay the difference, in addition to the amount realised by a 1d. rate. When one considers the way in which rates are going up, and the cost of repairs is increasing, it gives some idea of the impossibility of framing an estimate of the average annual loss over a period of ten years, and the serious risk that local authorities run of having to provide a

sum considerably in excess of the produce of a 1d. rate. The truth is, as Mr. Taliesin Rees (the president of the Liverpool Architectural Society) pointed out in a letter to the *Liverpool Daily Post* last Monday, the Ministry of Health scheme is breaking down. The £150 dole is not working. The machinery for supply of materials is clogged; the promises they made are not being kept, and instead of admitting the unworkableness of their scheme and telling the public that the task they have undertaken is too much for them, they go in for panic legislation, which has always proved, and in this case will prove, a failure.

The good old House Tax Act of 1808, although not out after making its century, still governs the Inhabited House Duty, and is a perennial prize puzzle for the lawyers. The latest case of "Bedford College v. Guest," however, may cause a falling-off in future litigation. Bedford College for Women consists of seven fine blocks of buildings in Regent's Park. Two of these are used residentially by the students, and a third partially, but four of them are wholly occupied for educational purposes. They are all, however, connected by corridors for convenience. It was along these that the House Duty found its way in. The whole place was assessed to the tax as if it were one dwelling, and at the gross rental value the duty chargeable was heavy. The college appealed to the Special Commissioners, who thought that in law, though perhaps not in fact, they were bound to hold that all these buildings were one house, and so assessable. Then in the High Court, Mr. Justice Rowlatt, still keeping to the legal aspect, confirmed this ruling. But the Court of Appeal knocked the bottom out of all the arguments and authorities by holding that the Commissioners must be taken to have found, as a fact, that this range of buildings was one house. As there is no appeal upon a question of fact, the case was over; this appeal stood dismissed, and the Revenue wins. We fear the Bar will hardly call this cricket, for, if the Commissioners take to finding facts only in these cases, legal arguments will not be wanted. In the meantime, the Court said nothing about the injustice of charging this tax upon these educational buildings as if they were one dwelling-house.

Building exhibitions are all very well in their way, but, as Mr. F. A. Voysey said on page 192 of our issue of March 12 last, a permanent museum of building appliances under some such conduct as that so spiritedly undertaken by the Society of Architects at Olympia, which so materially contributed to publicity, would certainly be better. Concurrently therewith—or without, if we cannot get it—we have often wondered why manufacturers do not, under competent guidance, arrange a series of competitions, and offer prizes for the best realisations of their wares in actual practice. Our brethren on the other side are in advance of us in this, as in some other matters. A competition arranged by the Chicago Brick Exchange and announced in a previous issue has just been decided. The object of the competition was to produce a design which, when built, will result in a worthy display of Dearborn brick. Dearborn brick is a new type of Chicago common brick just developed, a brick with great artistic possibilities, and of remarkable hardness and durability. The first prize, \$150, was won by Fred M. Hodgdon, of Coolidge and Hodgdon, 134, South La Salle Street. The second prize, \$100, was won by George Barnum, 4845 Hutchinson Street. The third prize, \$50, was won by Willard G. Searles, Rapinia, Ill. The judges were:—Charles S. Frost, Emery B. Jackson, Irving K. Pond, and Howard Shaw. We commend the idea to our advertisers. There is hardly a single produce the demand for which would not be increased satisfactorily by such proofs of its merits skilfully emphasised by actual use.

This year's exhibition of the Royal Scottish Academy, which opened on April 24, is essentially Scottish in character. There are fewer pictures from London or abroad than has been the case for years. The President, Mr. Lawton Wingate, Mr. E. A. Walton, Sir David Murray, Mr. J. H. Lorimer, Mr. Campbell Mitchell, Mr. David Gould, and others, send some good landscapes, Sir John Lavery, Mr. Fiddes Watt, Mr. David Alison, and Mr. Lintott excellent portraits, Mr. Robert Gibb, Mr. Ogilvy Reid, and Mr. Gemmell Hutchison interesting figure subjects, and Mr. William Walls several capable and attractive animal pictures. The work of the younger painters, however, dominates the exhibition. Occasionally extravagant or

bizarre, it shows fondness for high-pitched lighting, gay colour, and simplified form, affinities with recent art movements elsewhere. An attempt, praiseworthy, and to some extent successful, has been made to give sculpture also a national air. Resident sculptors, such as Mrs. Macgillivray, Mr. Portsmouth, Mr. Gamley, and Mrs. Williams, are contributors, and from sculptors of Scottish origin living in London Mr. Tweed and Mr. Reid Dick are prominent.

An electrical method of conducting auctions has been adopted in Holland, due in large measure to the proverbial phlegmatic temperament of the Dutch people and their hatred of boisterous proceedings. In this electrical auction every bidder receives a number and must take the seat marked with that number. On the auctioneer's platform is an annunciator board, surmounted by a dial with a pointer indicating the prices of the sale. The annunciator board bears as many numbers on it as there are seats in the hall. Every number on the board is connected by proper wiring with the chair carrying the corresponding number. When the sale begins the pointer is set in motion, and as soon as one of the prospective purchasers sees indicated a price which he is willing to pay, he presses a button on his chair, causing the pointer to stop and the number of the bidder to be automatically registered. A bell rings to indicate the bid. It is reported that this system is working out very well in actual practice.

The secret of the counter-offensive to the profiteering tailor is overalls—overalls to cover old clothes until tailors and cloth merchants see the error of their ways and the price of clothing falls. A "National League of Overall Clubs" has been formed in America, and the parent branch announces that already it has five thousand members, who go about their business or profession in the blue "slops" that were once the uniform of the mechanic. But why over our old clothes? With a little attention from the dress reformers, who are missing their opportunity, a suit of slops and an aertex shirt might clad us all in comfort and beauty—except, of course, the big-bellied and gouty, who, in their declining years, must disguise their dimensions in that waning badge of respectability, the frock-coat, Snip's ideal of male apparel and a big item in his bill!

The Bishop of Worcester last week dedicated in the churchyard of St. Leonard's, Glent, the memorial cross given in memory of all the Glent men (about 30) who fell in the war. The memorial is 17 ft. high, in St. Bees stone, and is the work of a Worcester sculptor, Mr. R. Haughton.

Mr. Leslie Roseveare, borough engineer of South Shields, has been appointed borough surveyor of Eastbourne, rendered vacant by the recent appointment of Mr. A. E. Prescott as county surveyor of Herts. The commencing salary is £900 per annum. Mr. Roseveare commenced his career as a pupil to Mr. Edward Sandeman, when the latter was water engineer of Plymouth, and served two years as an assistant with him during the construction of the Barrator reservoir.

ARCHITECTURE AT THE ROYAL ACADEMY.

There are several very large drawings chosen this year in the Architectural Gallery, and their big scale is in some cases out of proportion to the interest or merit of the work represented, and these Brobdignagian perspectives have crowded out not a few excellent and some more modest subjects. The place of honour in the room is devoted to a model of the design decided on for the remodelling of Norman Shaw's monumental scheme for the rebuilding of the Quadrant in Regent Street. These modifications have been undertaken mainly to satisfy the demands of the shopkeepers renting the premises in question. The Government engaged three architects to carry out these alterations, viz., Sir Aston Webb, the President of the Royal Academy; Sir Reginald Blomfield, and Mr. Ernest Newton. The model, we are told, is not so correct in its detail as the half-inch working drawing delineated by Sir Reginald Blomfield, and shown this year on the angle splay of the same gallery, and reproduced among our plates to-day. In the margin a perspective sketch gives the Piccadilly return façade of Messrs. Swan and Edgar's emporium. Its frontage line seems to conform to Norman Shaw's block plan for rearranging Regent Circus, which we published on September 28, 1906. His lines of height are adhered to in the new elevations, and, generally, his scheme has been adopted, the chief change being the omission of the columns and the arcade treatment, which gave such a monumental character to Shaw's scheme. The height of the new pavilions is about 90 ft. to the top of the walling; the main cornice, as in the Piccadilly Hotel, being 65 ft. above the pavement. How the exuberance of the Criterion will adjust itself to this particularly severe cupola-topped feature, repeated for Messrs. Cox and Co.'s Bank at the top of Waterloo Place, remains to be seen. The existing building by John Nash, next the Criterion, is about 50 ft. high, leaving Thomas Verity's rococo elevation free with projecting cornices and other features, which will be curtailed by its new neighbour in the near future.

The President is contented with two excellent views (1,208 and 1,219), "A Village Club, Hall, and Matron's House," at Whiteley's Estate, Burhill, Surrey, and "A Group of Cottages at Turner's Hill, Sussex." The former is built of flint fillings and brick dressings, with verandahs to the pair of side blocks, which are detached from the Hall in the centre. This has a tall fîche and a pretty gable. The Sussex homes consist of five blocks, half-timbered to the first floors and covered with hipped roofs of Sussex slabs. The middle blocks are set back prettily and the effect is good, as might be expected from Sir Aston Webb and Mr. Maurice Webb.

Sir T. G. Jackson and Sir Ernest George are not represented in the Architectural Room. This year Mr. Ernest Newton, R.A., has five exhibits. We give one of these to-day, "Flint Houses, Goring," and next week we hope to publish the garden view of the same mansion. "House at Burgh Heath" (1,223) is a plain Georgian-like stone residence, with big rusticated bays flanking the French windows forming the Terrace entrance. Green slates cover the hipped roof. The terrace with its balustraded walling makes a handsome adjunct to the building. "A House at Kingswood," garden front, is another example of Mr. Newton's skill, and No. 1,274 is his

"Memorial Shrine for Uppingham School," with its conical roof and bronze tablets inside the octagonal pavilion. We shall illustrate it shortly.

Sir Edwin Lutyens, R.A., sends two works (1,264), "The Interior of the Ball room at Imperial Delhi," as shown by our illustration, and (1,185) "The Jaipu Column, Imperial Delhi." Both are drawn by Mr. W. Walcot, and we shall illustrate the column in an early issue.

Mr. Gilbert Scott, A.R.A., is content with one exhibit, drawn, it would seem, by himself. The subject is the inside of proposed chapel for the Liverpool College for Girls (1,177), with a refined, lofty, and white-domed interior reserved in treatment having side-transpts and Corinthian columns, the organ gallery being placed to the right hand prettily managed. The Italian altar triptych is richly coloured and the square tie beams below the saucer domes of the ceiling to the chapel give a foreign effect. We miss Mr. Edward S. Prior, A.R.A., once again from the exhibition.

Perhaps the most interesting and in many respects the most original and capable architectural subject on view this year is the Zionist proposed Hebrew University at Jerusalem, by Professor Patrick Geddes and its architect, Mr. F. C. Meares, Castle Hill, Edinburgh. The buildings are very extensive, set along the undulating skyline of the hill chosen for the site. The style is Neo-Grec in detail and the whole scheme, with its pleasing domes, is well adapted to its environment. There is no plan, which is a pity, though the two views 1,173-4 give a capital idea of the work. Hard by is a capacious picture of "Proposed Theatre and Winter Garden, Clayton Square, Liverpool" (1,179), by Mr. Robert Atkinson. The scheme is of vast size and some breadth in handling, though the pedimented entrance wing suggests a paucity of treatment, and the Composite order employed frames an ungainly central opening, in contrast with the narrow slits of windows between the fluted pilasters. These in places sit awkwardly over door openings below though this defect from the street level would be masked by the projecting iron veranda shelter. A series of entrance and exits, looking like shop fronts, are set along the auditorium flank, which is otherwise chiefly plain walling. The stage has a semi-domical roof, or it may be the theatre, but as no plan is furnished, we may be wrong. The Winter Garden is American like, set on the flat over the entrance transept with columns and swags of greenery, pergola-fashion. Mr. R. Frank Atkinson is more successful with his clever design (1,196), "Magnet House, Kingsway." It is redundant, but certainly capable. The ground floor stage has square openings and a sturdy mezzanine stage. The big columns, combined with pilasters coming over, continue the same idea of solidity and embrace the next three floors. The façade is a little over-elaborate above with a massive central stone dormer under a pediment and a florid cornice. The effect as judged by this striking picture is superior to the American taste displayed by the Kingsway elevations, and little account seems to be taken of their existing leading lines. Mr. Cyril Farey has surpassed himself in this water-colour. Next this splendour we notice an excellent illustration by Mr. Andrew N. Prentice of some new buildings at Notgrove Manor, Glos. (1,198), quite different, of course, and perhaps less difficult, but distinctly satisfactory. We shall illustrate the subject soon, also 1,199 and 1,902, the charming chapel of All Souls, St. Stephen's, Gloucester Road, by Messrs. Walter and Michael Tapper, as well as (1,203) "The New Organ Loft at Highham Ferrers

Church," the scholarly design of Messrs. Temple Moore and Moore, delineated delicately in pencil. We also note in the same group "All Saints' Memorial Chapel at Northampton" (1,204), the design of Messrs. Charles Blomfield and Morgan. Sir John J. Burnet, R.S.A., is represented this year by an ecclesiastical scheme for refitting the chapel which Wm. Butterfield built for Balliol College, Oxford (1,152), illustrated by a line perspective and some sectional water-colours, hung at the other end of the gallery (1,285). These we shall publish next week.

There is nothing in the room more satisfactory in its way than Messrs. Briggs and Thornely's Late English Renaissance "New Chemical Laboratory Buildings, Liverpool University" (1,158). The work is distinctive and scholarly. Their "Stepney Public Buildings" (1,194), though hung higher, will make a worthy addition to the municipal architecture of the metropolis. This reference to the East End directs attention to the series of admirably plain erections now in course of building by Mr. Edwin Cooper for the Port of London Authority. No. 1,287 is a view of suitable dwellings and fire station at Tilbury; (1,178) "Warehouse Keeper's Offices, Royal Albert Docks"; and (1,186) the "Storage Building, West India Docks." Mr. Herbert Baker shows the "Harrow School War Memorial Buildings" in good keeping with their surroundings, and the existing Collegiate premises on the Hill (1,238), though the water-colour hardly does the scheme justice. Mr. Guy Dawber shows three works: "The Brondsbury Bank" (1,235), "Village Hall at Itton, Monmouth"; and "A Proposed House in Gloucestershire (1,252), all characteristically handled and suitably detailed with a sense of the picturesque. These remarks equally apply to Mr. Arthur Keen's exhibits (1,159), "Memorial Tower, New Southgate," and (1,233), a pretty picture of the "Friern Barnet War Memorial," a sort of open niche as a centre-piece enclosing a statue of "Peace," with flanking walls for the Roll of Honour, and ending in Piers with Vases. The President of the Institute, Mr. J. W. Simpson, with Mr. Ayrton, show a model of the "Lincoln's Inn War Memorial" (1,315), consisting of a garden seat in stone, with paved terrace, the space in front finished by dwarf pylons at each end simply conceived, with a plain centre-piece inscribed with the Roll of Honour. Pierced devices relieve the back wall of the edifice at the rear of the seats, three on each flank, of plain Union Jack-like pattern. The whole idea is befitting and well able as a public rest to hold its own against rough treatment, which few realise when they fuss up such structures with a lot of useless detail. There is another model worth special notice (1,312), showing the "Egyptian Expeditionary Force War Memorial at Jerusalem," by Mr. W. Palmer Jones. He also sends a drawing (1,139) and the design we illustrated a few weeks ago. Last year we also gave Mr. W. Douglas Caroe's great church view and plans for St. Helen's, Lancs. This season he displays the geometric drawings of the building (1,144), and these impress the beholder with its costly size and character for these times of ecclesiastical sparsity of funds for cathedral building. The new insurance buildings in King William Street, E.C., by Messrs. Campbell Jones, Son, and Smithers (1,146) are picturesque in ashlar, with turrets at either end. No. 1,147 shows a golden dome with arabesques at Brighton Theatre, by Mr. Robert Atkinson, with no evidence as to the lighting by windows. Mr. Cyril Farey shows a good housing

scheme at Bristol (1,155), and the "Salisbury War Memorial Pavilion" dashing drawn in (1,230). Sir Reginald Blomfield is represented by a second drawing in this Gallery (1,247), a "Chapel for the Military Cemetery, Lissenhoek, Belgium," a square building with a circular drum 30 ft. span covered by a flattish concrete dome coffered on the soffit in plastering. Two detached columns emphasise the altar recess, which is segmental on plan. The exterior is faced with brick. In the south rooms the same artist is in evidence with a pencil study (1,113) of "Willow Tree, Bredon."

Messrs. Lowry and Bucknall send a big effective water-colour of the Richmond Improvement Scheme (1,181), and Messrs. Mewes and Davis their London and County Bank at Antwerp (1,189), refined and restrained in style.

No. 1,215 is a Dutch-like village in stucco, with a hall in the midst and poplar trees facing the diagonal lay-out of the houses, by Messrs. Deane and Braddell. No. 1,218 is a foreshortened view of stone-gabled fronts, with a wall to the right of the through-way, with an outlet under the return house beyond; a clever study by Mr. Briant Poulter, with an ingenious lay-out for housing on a curious site. The War Memorial Hall for Lambeth, adjoining the town offices, by Mr. H. Austin Hall, is a somewhat pretentious project, domed after the fashion of the Albert Hall, with an arched front (1,139), ending with open-work turrets of good pattern, somewhat small in detail compared with the capacious fenestration. The work is to be in brick and stone, to match the Town Hall. The bird's-eye view of St. Peter's and the Vatican, Rome (1,245), by Mr. A. N. Prentice, we reproduced last year. New Chapel, Sidney Sussex College, Cambs. (1,158), by Mr. T. H. Lyon, is massively and well equipped in oak with taste, and Mr. F. L. Forge's project for a big R.C. church at Hayes, Middlesex (1,266), is in fanciful modern Gothic on good lines, with a novel feature of a choir loft over the sanctuary. Mr. Curtis Green has a drawing of a capital corner block—258-260, Piccadilly (1,284)—rich in detail, with bold semicircular arched ground floors on both fronts, and some elaborate ironwork with coupled Corinthian columns above and a plain attic, which ought to work out effectively. The big figures in front next the angle rather detract from the scale of the architecture.

No. 1,306—a Memorial Hall by Messrs. Woolfall and Eccles—is quite distinctive and Flemish in style, with an ornate tower, set off, it is true, by plain walling space, and this helps the florid dormers. The pretty cloister also shows architectural quaintness and relative values. The cost of such a work nowadays would be extravagant, however. The bank building at Colombo, Ceylon (1,310), designed by Messrs. Walker and Adams, is very foreign, as it should be, with a recessed frontage to give shadow, but the general proportions seem hardly satisfactory as a whole. Mr. Henry T. Hare sends a long picture of his Science Buildings, University College, Bangor, consisting of three blocks and an entrance pavilion, seen in silhouette against a restless black-and-white landscape, which, though well delineated in parts, gives a scattered effect to the whole.

There are 177 works in the gallery, as compared with 168 last year. The devotion of the central picture gallery at the rear to sculptures as well as the Lecture Theatre has added to the comfort of the exhibition, but, of course, has sacrificed one gallery hitherto devoted to paintings.

CEMENT.

Since the somewhat crude art of the manufacture of cement has been placed on a scientific basis no book has appeared of equal value to the monograph by Mr. Bertram Blount, F.I.C., just issued by Messrs. Longmans Green and Co., at 18s., as one of their well-appreciated series on industrial chemistry. Many of our readers will remember the excellent paper read by Mr. Blount and his late partner before the Institution of Civil Engineers in 1901, in which the introduction of the rotatory kiln was specially dealt with. From that time the rotatory system of burning has had full sway, and, at the moment, there is little prospect of it being displaced, until what Mr. Blount believes, and we with him, to be the ultimate goal of the industry, namely, the manufacture of Portland cement by blast-furnace methods, is achieved. Any who doubt this will do well to remember how a much-needed improvement in an industry which is year by year assuming a more and more important and indispensable place in connection with building and engineering was allowed to shift from this country, which was the birthplace of the rotatory system, to the United States, which is the country of its adoption, and where it has developed and prospered. Much has been done here during the last decade to bring British cement making abreast of the times; but there are periods in all industries when the disposition to rest and be thankful is not without its disadvantages and possible dangers; and the exceedingly interesting historical sketch which forms the first chapter of the book, and in which the rise and progress of the art of cement making from the almost pre-historic days when all very early buildings were made of dried mud, and when, in a dry climate, the natural cement was mud, well deserves careful perusal.

The Romans understood the use of calcareous cements thoroughly, and were probably the first people deliberately to make hydraulic cement; but the destruction of the Roman empire was followed amid the general debacle of all arts by the decline of that of mortar making, and in the Middle Ages, and until the time of Smeaton, no rational attempt seems to have been made to discover a really reliable cement. The very interesting summary given of Smeaton's researches bears satisfactory witness to the fact that in his own corner of science he did work which is as permanent as his lighthouse was stable, and which might well inspire any architect or engineer charged with the design of similar works of national importance to emulate his example.

The next step was the production of "Roman cement," as it was called, the real forerunner of Portland cement; but empiricism still held the day, and some of the instances thereof quoted are ludicrous. In 1827 the English bricklayer Aspdin stumbled on the fact that a mixture of chalk and clay, when burned, produced hydraulic cement, and began to make it in a small way. The cement was not unlike Roman cement, but with a somewhat higher percentage of lime. The burning process was of the roughest character, and parts of the charge, burnt in common limekilns, were overheated, while others were only half-burnt. So complete was the ignorance of the time that the under-burnt stuff was preferred to the harder masses which were the true clinker; and for years this silly idea persistently prevailed, and people solemnly discussed the best way of getting rid of the "evil over-burnt" material. The next stage was the introduction

of the rotatory kiln. As early as 1877 Mr. Thomas Russell Crampton patented a process for burning cement in rotatory kilns, but seems not to have worked his patent commercially. The Ransome kiln came next, the patent being dated May 2, 1885. Evidently one of Ransome's chief objects was to abolish the costly process of grinding, in ignorance of the fact that at the temperature necessary for burning Portland cement the material becomes plastic and sticky, and that systematic heating of the raw material by passing it through the kiln in a direction opposite to that of the burning gases was of fundamental importance. Wilfrid Stokes, in his improvement on the Ransome apparatus, realised clearly that one of the merits of a properly designed rotatory process is the economical and systematic use of heat. His apparatus was well thought out; but, regrettably, its failure delayed for nearly ten years further progress here on similar lines. Meanwhile the idea of a rotatory process had taken root in the United States, and various inventors took the matter in hand—notably the firm of Hurry and Seaman at the Atlas Company's works at Northampton, Pennsylvania, which Mr. Blount visited and reported on in 1898. On the Continent inventors were also busy about the same time, and gradually the modern form of the rotatory kiln was evolved, which differs little from the earlier forms, the alterations since made being only in the direction of greater size and greater simplicity, especially as regards the burner.

Chapter II. deals with the raw materials of Portland cement. In this connection it is noted that the slow growth of the industry was due to the ignorance of architects, engineers, and builders of the fact that, as the bulk of the earth's crust consists of acid oxides, and that carbonates of lime exist in colossal quantities, Portland cement, consisting of basic silicates and aluminates, could be manufactured in many parts of the globe. Perhaps, even to-day, a good many people need carefully to study Mr. Blount's able summary of the raw materials, which he divides into groups according to their nature, and not according to their country of origin. Fuel, of course, is one of the most important elements in cement-making, and in Chapter III. the various fuels available, and their merits and drawbacks, are examined. Coke was the principal fuel of the early makers. At present small coal is generally used for firing the rotatory kilns. Producer gas has been tried for burning lime, but not for cement in fixed kilns. Ransome and Stokes both fired with producer gas, but unsuccessfully, chiefly because it is not easy to maintain a high uniform temperature with producer gas unless there is appended some system of regeneration, and this is not easy with a cement furnace. Oil has been tried with complete satisfaction, but oil is too dear. Electrical heating has been tried, but it is still dearer than oil. Coal, in Mr. Blount's judgment, is now the only fuel of practical importance.

Chapter IV. gives fully the process of manufacture from the preparation of the raw materials, through their passage through the wash-mill to the slurry storage tank, and the crushing and grinding, and thence to the kiln. Copious illustrations of every appliance are given. Chapter V. deals with necessary power, a matter secondary only to the raw materials. Cheap power is indeed absolutely needful for success. Coal

is the usual primary source, but where petroleum can be had cheap it may be used with advantage. Electrical driving has been installed of late years by practically all the new cement works. In Chapter VI. the chemical control of the materials used is detailed, and testing naturally follows in Chapter VII., together with methods of analysis in Chapter VIII. The Chemistry of Portland Cement is considered in Chapter IX., and the functions of the various constituents of cement in Chapter X. The uses of cement are briefly set forth in Chapter XI. Mr. Blount contends that the art of preparing a beautiful structure in cement has not by any means been pushed to its full limit, and that such things as balustrades, cornices, and whole façades can be prepared with a surface so well finished that, when the structure is regarded as a whole, the effect is entirely acceptable. The natural course is to line the moulds with a thin layer of much finer and better cement, filling in in the ordinary way with sound concrete, not too coarse, so that the finished work may present a face comparable with that of worked stone. He further insists that the one obvious limitation to the use of cement in buildings of an architectural pretensions is much exaggerated, and arises from ancient prejudice in favour of stone, dating back when architects were both builders and masons. He is careful to state that these remarks do not apply to cases where the facing is definitely a sham and serves no purpose whatever, as in that notorious instance the Tower Bridge, which is plastered with pieces of stone, concealing its essential beauty of structure, and which are of about as much use as layers of wadding padding Apollo.

The effect of various substances on cement is the subject of Chapter XII. The destructive action of sea water is the commonest and most important. Harbour engineers, of course, know that their concrete blocks will ultimately perish; but, says Mr. Blount, they will last as long as there is any need for the harbour. He has tried repeatedly to induce engineers to use puzzolana ground finely together with cement for heavy work, and he says it is "up to" manufacturers to sell this material and to convince harbour engineers that it is the best for the very difficult work they have to face.

A brief chapter on the by-products of cement—chiefly the waste heat from the kilns, and the volatilised alkalies—concludes the volume. Five useful appendices are added, including various foreign specifications for Portland cement; and a good index adds to the value of one of the best technical books we have read for a long time, in which the complete mastery of the subject is seconded by a facility of expression to a degree seldom attained.

The Belfast Board of Guardians have instructed Messrs. Young and MacKenzie to prepare a sketch plan of a new hospital on modern lines on a site to be selected.

At a meeting of the Mansfield Woodhouse Urban District Council last Monday night Mr. Mitchell, one of the newly-elected members, asked a question in regard to housing. The Chairman (Mr. W. F. Warner) replied that the Council had honestly done their best in the matter. The Government, he said, had undertaken to find the money, and now that they could not do so they were asking the Council to do it. If the Council were sure of being able to borrow £100,000 they could get on with their scheme, but they must not enter into a contract blindly.

Our Illustrations.

REGENT STREET QUADRANT, LONDON, AS REBUILT.

This detail, now on view at the Royal Academy, gives the design of the pavilions which will stand one on each side of the east and west ends of the "Quadrant." The motives of the columns and the arch under are repeated with modifications from Norman Shaw's original design in the Piccadilly Hotel, and the window with the segmental pediment is repeated from this Piccadilly façade, but the blocks on the columns are omitted. The arch is widened and the rustications are simplified. Elsewhere in the façade the arches and columns are omitted, and a much simpler treatment with larger shop fronts adopted, as shown on the right hand side of the drawing, and in more detail in the model of the design, which is exhibited at the Royal Academy. The main cornice and the string course above the mezzanine are preserved. Since the model was made, the dimensions of the cupola roof of the pavilion have been increased and heightened; these are correctly shown in the detail. The small sketch in the upper corner indicates the treatment facing to Piccadilly Circus. The north side of the Quadrant will be similar to the south, except that there is no central feature as in the hotel on the south side. The design includes the County Fire Office to the east of the North Pavilion. The accompanying illustration is a reduced reproduction of the half-inch scale detail designed and delineated by Sir Reginald Blomfield, R.A., as joint architect in co-operation with Sir Aston Webb, P.R.A., and Mr. Ernest Newton, R.A., appointed by the Government to confer and carry out this modified scheme for the completion of the undertaking commenced by the late Norman Shaw, R.A. His designs were illustrated in our issues of September 28 and November 23, 1906. The Piccadilly Hotel façade shown by a double-page perspective appeared in our issue for October 19, 1906, when two plans were given showing the lay-out and also the Quadrant frontage in Regent Street. This will be incorporated as the central feature of the new elevation now published for the first time.

THE BALLROOM, GOVERNMENT HOUSE, IMPERIAL DELHI.

This watercolour drawing now at the Royal Academy is by Mr. W. Walcot, depicting an interior of the ballroom designed by Sir Edwin Lutyens, R.A. The apartment is situate to the right of the Durbar Hall towards the segmental end of the North Court of the Government House. The exact position is shown by the plan of that building which we published on May 7 last year. In the same issue will be found a detail perspective by the same artist of the north façade of Government House, as well as another plate illustrating the processional way and great stairs of the Secretariat, lent us by the architect, Mr. Herbert Baker, F.R.I.B.A. His design for the carriage entrance appeared in our number for May 21. The Guard Houses and Commemoration Column, by Sir Edwin Lutyens, published on June 4, were followed on June 25 by a further picture belonging to the same series, and showing Mr. Baker's interior of the Garden Loggia. We printed at the same time the lay-out plan setting forth clearly the respective

positions of the Government House and the Secretariat at Imperial Delhi. Detail plans of the last-mentioned building appeared in our issue of June 23 last year. Four views lent us by Sir Edwin Lutyens, and showing various external views of the Government House will be found in our issues of July 16 and August 13, 1919. An official description of the whole Imperial scheme was printed with the first of the above set of views and plans. Sir Edwin Lutyens' second perspective at this year's Academy Exhibition is devoted to the Commemoration Column, showing its design in detail. This we shall illustrate as a double-page very shortly.

FLINT HOUSE, GORING, OXFORDSHIRE.

This house stands in wooded country on the high ground about two miles to the north of Goring Station. It is built of Cleve Hill Stone and the walls are faced with natural (unknapped) flints. It is roofed with dark red sand-faced, hand-made tiles. The garden has been planned, but has not yet been made owing to the war. The builders were Messrs. Benfield and Loxley, of Oxford, and the hot water services and internal plumbing were by Messrs. Wenham and Fowler, of Croydon. The drawing reproduced is in the Royal Academy Exhibition. Mr. Ernest Newton, R.A., is the architect. We shall give the second drawing showing the garden front of this house at an early date.

THE LIGHTING OF DISPLAY WINDOWS.

In deciding what constitutes effective lighting in a display window, two fundamental, but frequently neglected, principles should be borne in mind. One is that the light units themselves should be invisible, since, unless the trader proposes to sell electric light fittings, there is no object in making them the centre of attraction, as they are bound to be if fixed within view. The other is that all the light should be concentrated on the display, none being wasted on the pavement, or directed into the eyes of prospective customers. To light the pavement is not only wasteful but is also positively bad, in that it reduces the contrast which should be maintained between the lighted window and its surroundings.

This contrast is just as important in shop window lighting as in stage lighting. The glare and dazzle caused by lamps (especially the highly brilliant half-watt type) fixed in the field of vision is not only irritating to the eyes, but actually lessens the seeing power, and, to many people, is physically repellent.

To concede the truth of these arguments (and they are surely irresistible) is to agree that the only thoroughly effective method of lighting a shop window is by means of units fixed along the top front edge of the window (the only position where full concealment is possible), and so arranged as to throw all the light down and back on to the displayed goods. Outside lamps must not, of course, be used.

A good example of this method of lighting is provided by the recent installation in the windows of Messrs. Alders's department stores, Croydon. This remarkably successful installation was carried out by Messrs. J. and T. Robinson, the well-known electrical contractors of George Street, Croydon, the lamps and special reflectors being supplied by the British Thomson-Houston Co., Ltd., 77, Upper Thames Street, London, E.C.

Each light unit consists of a 100 watt Mazda half-watt type lamp in an X-ray window lighting reflector. These units, of which about 250 were used, are fixed along the top front edge of the windows, and are spaced about 3 ft. apart. The units are concealed from view by a narrow tapestry cur-

tain. The X-ray reflector has a reflecting surface of mirror glass—than which there is nothing more efficient—so formed that the light is distributed uniformly over the floor and back of the window, without overflowing on to the pavement. In the manufacture of X-ray reflectors special corrugated glass blanks are coated on the outside with pure silver, which is thoroughly protected by several coats of elastic enamel. It should be clearly understood that the X-ray reflector is an individual reflector for a single lamp, and must not be confused with the less

COMPETITIONS.

EXETER.—The rebuilding of Victoria Hall and lecture rooms, etc., in Queen Street, Exeter, after the recent fire, when the original structure was ruined, has been the subject of a competition, Sir A. Brunswell Thomas, F.R.I.B.A., being the professional assessor nominated by the President of the R.I.B.A. The awards have now been decided for the premiums of 100 and 50 guineas for the designs placed second and third respectively, the author of the scheme given the first place being appointed architect, viz., Mr. S.

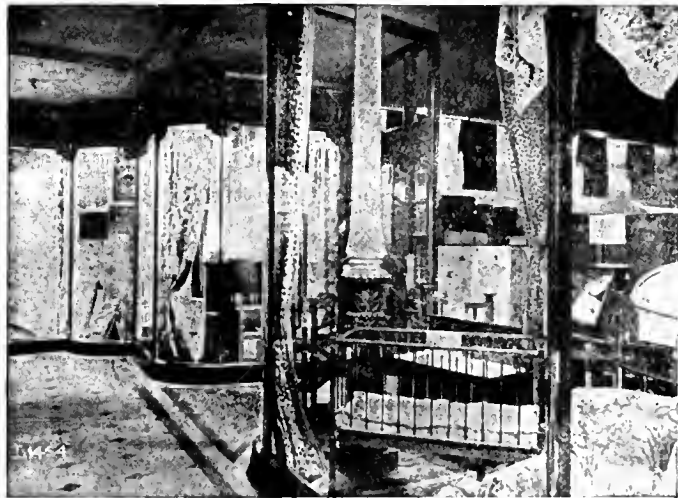


efficient and more expensive troughing sometimes used.

As may be judged from the untouched artificial light photographs which illustrate this article, the illumination in the windows is brilliant, uniform, and comparatively shadowless, enabling every smallest detail to be seen with perfect ease and clarity. More important still, there is not the slightest suggestion of glare to distract or annoy the prospective customer. Another very attractive feature is the contrast between the bril-

liant windows and the darker street. By this means the effectiveness of the display is greatly enhanced. The general effect is somewhat similar to that secured on a theatre stage—where the art of arresting attention and stimulating appropriate emotions by visual appeal is perhaps better understood than anywhere.

R.I.B.A. WAR MEMORIAL.—The Council of the Royal Institute have decided to erect a memorial tablet with the names of those members, licentiates, and students of the R.I.B.A. who laid down their lives in the service of the Empire during the Great War.



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Mr. Charles F. Wike, M.Inst.C.E., terminated his connection with the Corporation of Sheffield last week, after a service extending over a period of thirty-two years—first as city engineer and surveyor, and latterly as city engineer. Mr. Wike went from Leicester in 1888. He had been deputy borough surveyor in that town, and for twenty years after his arrival in Sheffield he was one of the busiest men in the town.

A competition is to be held for the design of the tablet. It will be open only to members, licentiates, and students of the R.I.B.A. who served in the Forces during the war. The President has been requested by the Council to act as assessor. The conditions of the competition have been published, and copies can be obtained by any intending competitors who apply to the secretary. The Council invite subscriptions, which should in no case exceed one guinea, to raise a fund for the erection of the memorial. Cheques or postal orders should be made payable to the Royal Institute of British Architects, and should be addressed to the Secretary, 9, Conduit Street, Regent Street, W.1. To the author of the design placed first, an honorarium of 100 guineas will be paid, to the author of the design placed second, a

premium of 30 guineas, and to the author of the design placed third, a premium of 20 guineas. The total cost of the memorial, fixed complete, is not to exceed the sum of £500, exclusive of honorariums and premiums. All designs are to be sent in anonymously, without motto or device of any kind, and are to be delivered, carriage paid, addressed to the Secretary, Royal Institute of British Architects, 9, Conduit Street, London, W., and endorsed "R.I.B.A. War Memorial Competition," on or before July 20, 1920. Each design is to be accompanied by a sealed foolscap envelope, containing the name and address of the author and a declaration signed by him, stating that the design is his own personal work, and that the drawings have been prepared by him or in his office under his own supervision. Any questions which competitors desire to raise must be addressed to the Secretary, R.I.B.A., on or before May 30 next: copies of such questions, and the answers thereto, as the assessor considers necessary, will be sent to each competitor, and will be regarded as supplementary to these instructions.

SOUTHPORT.—The assessor for the competition for the New Secondary School for boys, Southport, Mr. Maurice Webb, M.A., D.S.O., C.M.G., F.R.I.B.A., has now awarded the premiums offered by the Southport Education Committee as follows:—1st Prem.—Messrs. Granger and Leathart, 35, Canterbury Road, Brixton, London, S.W.9. 2nd Prem.—Mr. Charles B. Pearson, 18, Dalton Square, Lancaster. 3rd Prem.—Messrs. Adshhead, Topham, and Adshhead, 23, King Street, Manchester. The designs submitted, 96 in number, will be exhibited in the Municipal Art Gallery, Lord Street, Southport, May 3, to Wednesday, May 12, inclusive.

OUR PRINTERS AND THE PRINTERS' PENSION CORPORATION.

DINNER TO MR. GEORGE EATON HART.

A number of influential leaders in the newspaper and general printing industry gathered together at dinner at the Connaught Rooms on Friday evening, April 23, to express to their guest, Mr. George Eaton Hart, managing director of the St. Clements Press, Ltd., their appreciation of his fifty years' work in the printing trade and of his great services to the Printers' Pension Corporation.

The chair was taken by Viscount Burnham, C.H., and among those supporting him were Mr. J. Gomer Berry, Chairman of St. Clements Press, Ltd.; Mr. W. E. Berry, Deputy Chairman; the Right Hon. C. W. Bowerman, P.C., M.P.; Mr. R. A. Austin-Leigh, Chairman of the Master Printers' Association; Mr. R. J. Barrett, Managing Editor of *The Financial Times*; Mr. J. E. Elias, managing director of Odhams, Ltd.; Mr. E. J. Kibblewhite, managing director of the Strand Newspaper Company; Mr. H. J. Stowell, representing the *Draper's Record*; Mr. L. Kaufman, on behalf of *Truth*; Mr. E. H. Walker, of Messrs. Walker Bros.; Mr. E. B. Hanson, of Messrs. Stephenson Blake and Co.; Mr. D. Greenhill, Sun Engraving Company; Mr. J. Mortimer, Secretary of the Printers' Pension Corporation; Mr. Herbert Birchall, Syndicate; Mr. J. Scotland, Tanganyika Concessions; Mr. N. McLaren, Pelman Institute; Mr. A. Shepherd, Business Builders; Mr. T. Whalley and Mr. B. Nuttall, Industrial Securities; Mr. A. E. Goodwin; Mr. H. E. Peacock, *Morning Post*; Mr. H. W. Kirk, the *Economist*; Mr. Butler, London Correspondence College.

A MASTER OF THE PRINTING CRAFT.

The toast of "The King" being duly honoured, the Chairman proposed the health of their guest, Mr. George Eaton Hart. They were assembled there, he said, to express their appreciation of the fifty years' work of their guest, a master of the printing craft. Mr. Hart might justly be called the doyen of the printing trade. He had been connected with all stages of the printing industry through a very long period, and he had proved himself a true friend and gained the confidence both of employers and employees. To Mr. Hart the Newspaper Proprietors' Association were greatly indebted for his services for many years as Chairman of the Technical Committee, and they owed him a great debt for his co-operation and guid-

ance. In the early days of the linotype the first working arrangements with the operators were settled under Mr. Hart's chairmanship, and one of his recent spheres of service had been as Chairman of Committee for the printing trade for the employment of wounded soldiers and sailors. And for all these matters there was every reason to honour their guest. He was essentially a self-made man and had "carved out his own career." To do him honour they were assembled there for the purpose of completing the second St. Clements Press Pension Fund, a matter which he had very dearly at heart.

This interest in the welfare of employees and for those who might, through illhealth or no fault of their own, suffer misfortune had accomplished a great deal in promoting a good feeling between employers and employees, and he thought there was no trade in the country in which such a spirit of co-operation existed as in the printing trade, and this fact might well be taken to heart and copied by other trades. Certainly the relationship existing at St. Clements Press was a most notable example of this spirit of co-operation, and to a great extent this was due to the fine organising ability of Mr. Hart and to the ideal he ever had in front of him of elevating the art of printing and of improving the conditions of those connected

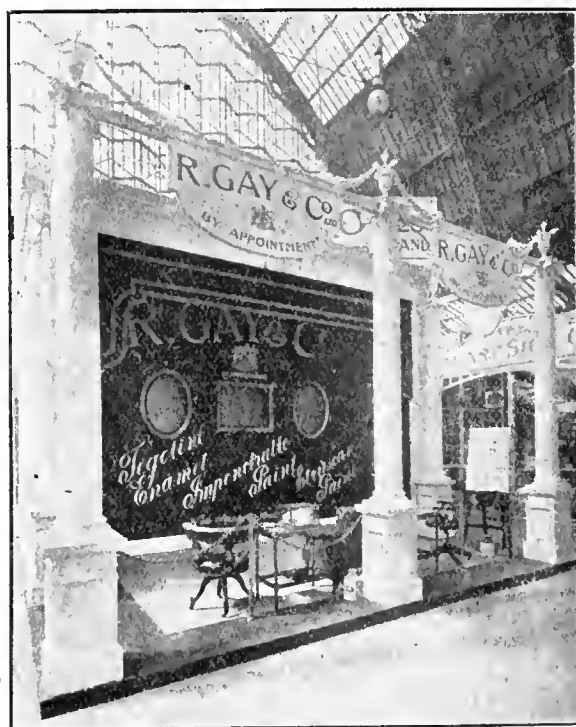
better work and in the general elevation of the printing craft.

Letters of appreciation and regret at being unable to be present had been received from Lord Riddell, Sir Arthur Pearson, Sir Robert Blair, London County Council; Sir Samuel Waring, Mr. Hy. T. Cadbury, of the "Daily News"; Mr. Julian D. Marks and Mr. G. W. Kettle, of the Dorland Agency; Mr. T. Marlowe, of the "Daily Mail"; Mr. J. C. Small, London County Council; and many others.

The Hon. Treasurer of the fund—Mr. W. H. Eyre, a director of St. Clements Press—was able to announce the very satisfactory result that the necessary amount to complete the second pension had been contributed with a considerable balance over, which might be devoted to the general fund of the Printers' Pension Corporation or for the purpose of starting even a third pension in connection with St. Clements Press.

A REALLY CLEVER AND EFFECTIVE PUBLICITY DEVICE.

Probably a good many of our readers who visited the Building Exhibition were attracted by our notice on p. 269 of our issue of April 9 to the stand of Messrs. Gay and Co., Row G, 125, where one of the most



MESSRS. GAY & CO.'S CLEVER PUBLICITY DEVICE.

therewith. He felt sure as a result of the evening's gathering the second St. Clements Press pension, to be known as the "George Eaton Hart" pension would be an accomplished fact, and would be a testimony of their appreciation of their guest which would be in the form most prized by him.

GREAT BELIEF IN TECHNICAL EDUCATION.

In reply, Mr. Hart said that in no way could the appreciation of what he had been able to do be so acceptable to him as that of providing help for those who needed it in the time of misfortune. The second pension which they hoped to complete would stand for ever, and his best thanks were due to those connected with St. Clements Press who had worked with him with great self-sacrifice and enthusiasm to this end. Early in life he realised how many of the young men in the printing trade were imperfectly trained, and he was proud to think that at least 250 men had learned their trade under his own personal supervision, and at the end of the time had been sent out with their indentures endorsed that they had served with credit to themselves and to the satisfaction of their employer. He believed with all his heart in technical education, and no time spent in this connection or cost entailed could be a sacrifice, as it was well repaid in

effective and ingenious publicity displays was shown, and not a few doubtless wondered how it was managed.

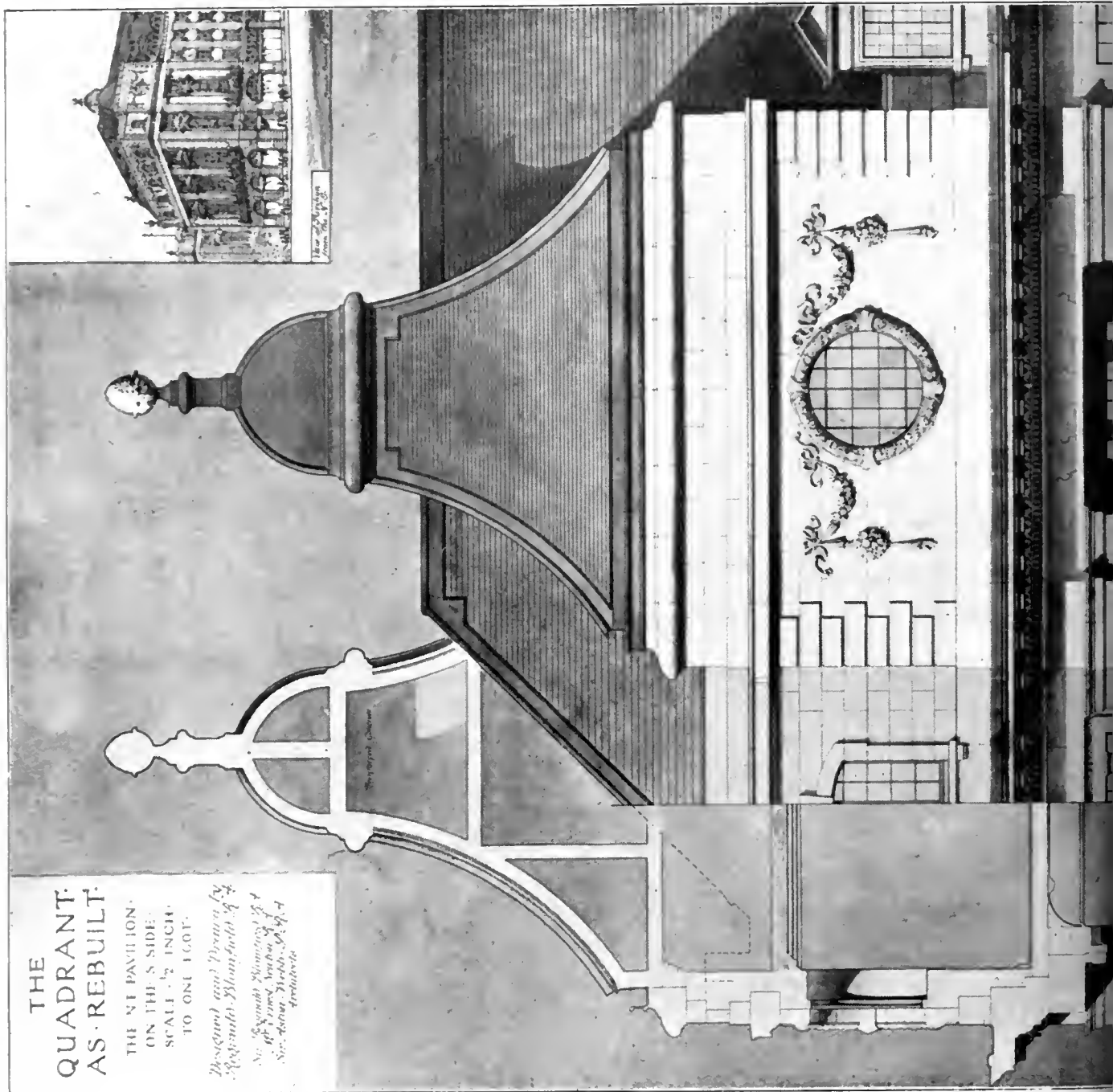
On the front of the stand a large screen was hung, pierced, at equal intervals, by three openings, in which appeared at regular intervals throughout the day surfaces coated with the manifold and various paints, distempers, and varnish, for which the firm is famous, and the number of which is legion.

The mechanical arrangements, as the favoured few who were taken "behind the scene" saw, were very ingenious. Endless chains, actuated by motors, revolved round pulleys, till, at the arranged moment, the levers controlling the surface exhibits were automatically moved forward, and the change of subject followed.

The manifest advantage to any architect, builder, or house owner, over any mere facilities for judging effect of the desired colour by small sample-cards, etc., afforded by the large surfaces of coated material shown was obvious, and admitted by all.

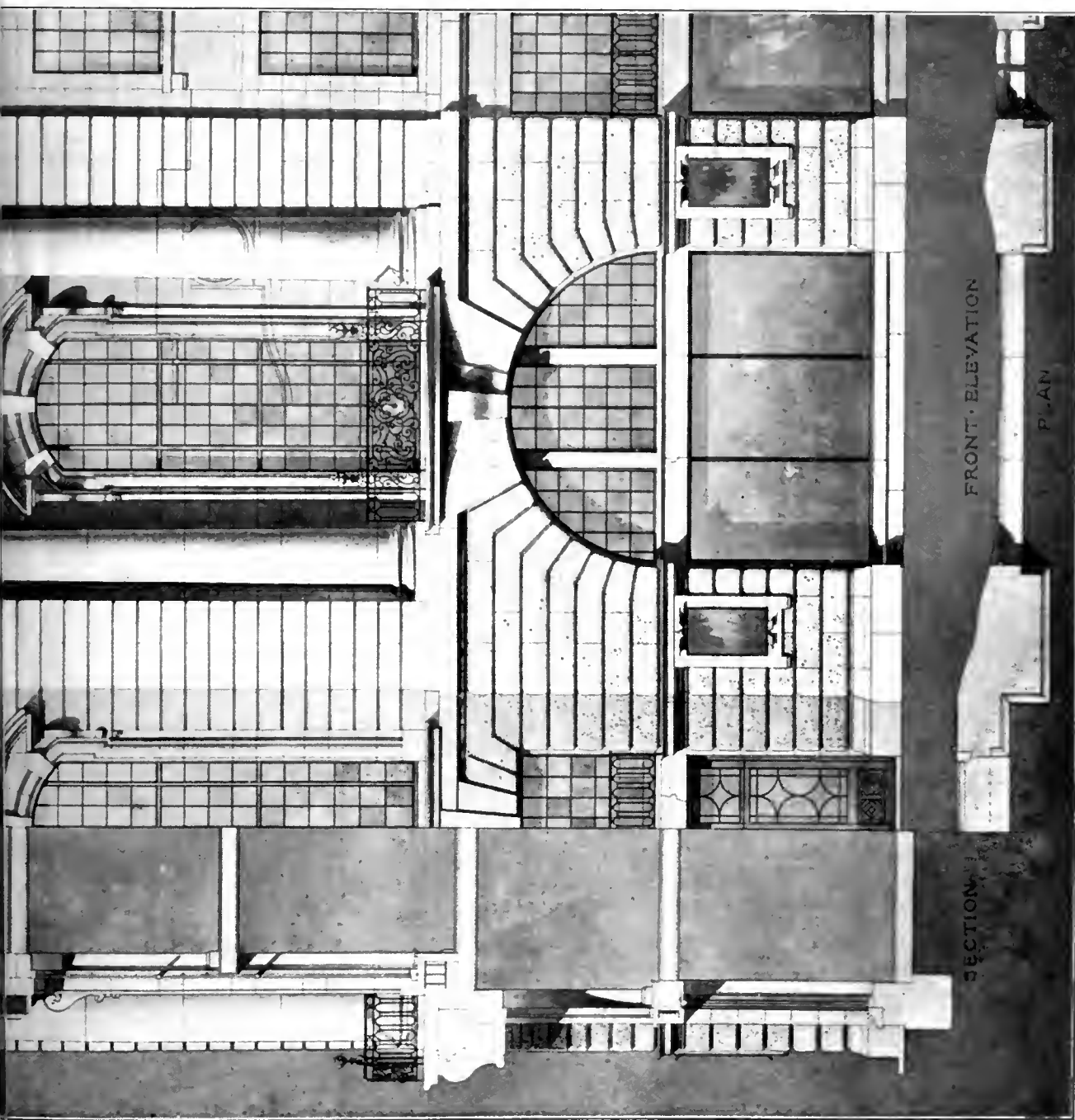
We have seen a good many attempts on a small scale to secure the display of specialties, but never before with the success of Messrs. Gay and Co.'s arrangement, which was, in its way, certainly the novelty at the exhibition.

327-330



THE
QUADRANT
AS REBUILT.
THE NE PAVILION.
ON THE S. SIDE.
SCALE 1/2 INCH
TO ONE FOOT.

Designed and Drawn by
Frederick Blomfield & Co.
No. 10, Strand, London, W.C. 2.
Sole Architects, 1919-20.



REGENT STREET QUADRANT, LONDON, AS REBUILT, 1920.
Sir REGINALD BLOMFIELD, R.A., Sir EASTON WEBB, P.R.A., and ERNEST NEWTON, R.A., Architects.

331-334

THE BUILDING



THE FLINT HOUSE
GORING
Entrance Front

FLINT HOUSE, GORING-ON-THAMES
Mr. ERNEST

APRIL 30, 1920.



ORDSHIRE : ENTRANCE FRONT.

A., Architect

735-338





HOUSE, IMPERIAL DELHI.
A., Architect.

Building Intelligence.

EDINBURGH UNIVERSITY EXTENSION.—

In order to meet the increasing demands for accommodation in the Histological department of the University of Edinburgh, the existing Forestry building in George Square has been carried up another story, and provision made for about 300 students in well-equipped laboratories. The accommodation provided consists of three large laboratories, professor's room, assistants' and preparing rooms. Places for 150 students have been arranged for in the laboratories, and as there are two classes per day, total accommodation is therefore found for 300 students. Each student's place is thoroughly equipped in the most up-to-date manner for microscopic work, with electric light, gas, and water services, as well as with lockers and drawers. The University authorities have congratulated the contractors on the celerity with which the work has been done. At a Press view of the new building last Friday it was explained that the completion of the work within the limited time was only made possible by the energetic co-operation of all the trades concerned, proving that, notwithstanding all the difficulties attending present-day building, it was still possible to get things done. It was also explained that the consideration of every detail by Professor Sir Edward Schäfer had largely contributed to the successful carrying out of the scheme, and obviated delays inseparable from altering work in progress and when completed. The architect for the new department was Sir Robert Lorimer, A.R.A., F.R.I.B.A., and the contractors were:—Messrs. Colin Macandrew, Ltd.; Messrs. Barton and Sons; Messrs. Mackenzie and Moncur, Ltd.; and Messrs. William Wintour and Sons.

PROFESSIONAL AND TRADE SOCIETIES.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—The annual general meeting will be held on May 3, 1920, at 8, to receive the annual report of the Council, etc. A special general meeting, summoned by the Council under By-law 65, will be held on Monday, May 10, at 8 p.m., when the following resolution will be moved from the Chair:—"That, in order to provide funds to meet the increase in expenditure due to the general advance in prices, an addition of one guinea be made to all Entrance Fees and Subscriptions of Members and Contributions of Licentiates; and that the necessary steps be taken to obtain the sanction of the Privy Council to such revision of By-law 17 as is required to give effect to this resolution." A general meeting of licentiates summoned by the Council to elect seven representatives to act on the Unification Committee will be held at the Institute on Tuesday, May 18, 1920, at 4.30 p.m. A general meeting of unattached architects, to elect three representatives to act on the Unification Committee, will be held at the Institute on Thursday, May 20, 1920, at 4.30 p.m. All architects not belonging to any professional organisation are invited to attend.

NORTHERN BRANCH, SOUTH WALES INSTITUTE OF ARCHITECTS.—A meeting of architects from Pontypridd, Merthyr, etc., was held at Pontypridd on April 23 (Mr. Ivor P. Jones, President of the South Wales Institute of Architects, presiding), and the new branch for the northern district was formed. The following Executive Committee was elected:—Chairman, Mr. E. W. G. Richards, of Merthyr; Secretary, Mr. T. Edwin Rees, of Merthyr; Treasurer, Mr. Jacob Rees, of Pentre; members: Mr. J. Llewellyn Smith, Licentiate R.I.B.A., Aberdare; Mr. G. Vincent Evans, Licentiate, R.I.B.A., Pontypridd; Mr. T. W. Millar, Mountain Ash; Mr. W. D. Morgan, Pentre; and Mr. A. Almond, Pontypridd (associates' representative). The representatives of the Northern Branch on the Council of the South Wales Institute of Architects were also elected as follows:—Mr. E. W. G. Richards, Mr. W. D. Morgan, Mr. J. Llewellyn Smith, and Mr. A. Almond.

PARLIAMENTARY NOTES.

LAND VALUES DUTIES.—The Chancellor of the Exchequer writes, in reply to questions by Brig.-Gen. Croft and Commander Sir Edward Nicholl, that the estimated cost in salaries and allowances of the staff of the Valuation Department for the current financial year was £468,000. Since 1914 the staff had been reduced by 3,596, and he was considering whether further reductions of staff could be made. The total receipt of land values duties, excluding mineral rights duty and excess mineral rights duty, to March 31 last was £1,329,000. The total cost incurred in connection with the work of the Valuation Department and the collection of the land values duties up to the same date was estimated at £5,000,000. The estimated cost of the Valuation Department for the current financial year was £537,000, including an estimated sum of £35,000 in respect of expenditure borne on the votes of other departments.

LUXURY BUILDING.—Dr. Addison informed Mr. Myers on Tuesday that he was aware that the restriction of luxury building was exciting opposition in certain quarters, but as the suggestions to local authorities regarding the exercise of their powers in this matter were prepared in consultation with, and were accepted by, the Joint Industrial Council of the Building Trade, he was entitled to assume that they had the support of building trade employers as well as operatives. He should certainly take all practicable steps to ensure the reasonable application of the luxury building regulations in order to secure the speedier production of houses. Sir J. Rees asked whether he would guarantee that existing contracts and commitments would be saved in any regulations that might be enforced in that respect. Dr. Addison: I do not think that I can guarantee anything of that sort. Sir J. Rees: Is the right hon. gentleman aware of the danger to the cause he has at heart by interfering in this manner? Dr. Addison: We have considered all these matters at great length. It is much more important to get houses than to get luxury buildings. (Labour cheers.)

THE VENTILATION OF PARLIAMENT.—Sir A. Mond, First Commissioner of Works, replying on Tuesday to Sir Harry Brittain, who asked whether he was able to give any information as to the plans which he had had in hand for a general improvement of the ventilation in the Houses of Parliament, said that the problem of ventilation to those buildings was a most difficult one. His officers were examining it in conjunction with the officials of the National Physical Laboratory, but exhaustive tests and analyses were required, and it would necessarily be some time before a decision could be come to as to carrying out a general scheme of improvement. Replying to a supplementary question from Lieutenant-Colonel A. Murray, Sir A. Mond said that all the reports on the subject—and there were a good many of them—would be taken into consideration. Sir H. Brittain: Will anything be done with regard to hot air along the corridor? (Laughter.) No answer was given.

Mr. J. Murray, the President of the National Federation of Building Trade Operatives, speaking at Battersea last Sunday, maintained that in some places the Government houses would eventually become slums; they were built too close together. The dividing wall between each of these houses was so thin that one could almost hear one's neighbour change his mind.

"Diarist," in *The Westminster Gazette*, was induced—it seems a long time ago—to make a plea on behalf of "the shortest lamp-post in London," which, he was told, had suffered in an air raid. And now his attention is called to it once more. It stands in the Euston Road between the fire station and St. Pancras Church. Its metal coroner is still askew, and still blackened as in the days of the raids. Other lamps have been cleaned and brightened, but "the shortest lamp" is still darkened above. "Is this," he asks, "neglect; or is it deliberate, to leave for us a memorial of the visits of the night hawks?"

Our Office Table.

At the fiftieth ordinary general meeting of the Val de Travers Asphalt Paving Co., Limited, to be held at 18, Hamilton House, 155, Bishopsgate, London, E.C.2, on Wednesday, April 29, 1920, at 12 o'clock noon, the directors will present the balance-sheet and profit and loss account duly audited for the year ending December 31, 1919. After making the following appropriations: Depreciation and cost of maintaining plant and machinery, £3,382 18s. 1d.; written off cost of neuchatel concession, £882 7s. 1d.; depreciation in value of horses and harness, £89 7s. 10d.; and written off mining property, £2,000; the net profits of the year are £19,852 18s. 3d., which with the sum brought forward, £2,168 12s. 10d., amount to £22,021 11s. 1d. From this has to be deducted the interest on the debenture stock, amounting to £6,900. An interim dividend of 3d. per share was paid in October last; a further dividend of 9d. per share, less income-tax, is now recommended, making 5 per cent. for the year, and leaving a balance to be carried forward of £5,321 11s. 1d.

According to the report of the Associated Portland Cement Manufacturers for the six months ending December 31 last, the net earnings, after deductions that include £134,260 for repairs and renewals, amounted to £400,934, or at the rate of £801,868 per annum, which compares with £688,358 in the last completed twelve months, when £169,267 was allowed for repairs and renewals. Debenture and other interest and depreciation and sinking funds call for a sum of £206,309, or more than one-half the profit, but of the earnings of 1918-19 the company paid 2½ years' preference interest, thereby wiping out all arrears on the Preference shares, and the board is now in a position to pay 4 per cent. for the 24 months (or at the rate of 3 per cent. per annum) on the Ordinary shares, and to add £18,000 to the undivided balance of £125,673 that was brought in. The dividend now recommended will be the second that the Ordinary shareholders have received since the company's incorporation in 1900.

"The Churches of Belgium," by Wilfrid Randolph (London: George Routledge and Sons, Ltd., 6s. net) is a readable volume of 103 pages, with eighty illustrations, mostly, of course, of churches with which our own readers are familiar, but which the general public will find useful, especially those of some of the minor buildings. The author has adopted a topographical view as his base of classification, and divides his subject in accordance with the Western, Central, and Eastern sections of the country, subdividing each, further, into regional centres, or grouped categories admitting of a locally chronological treatment.

At the Royal Society of Arts, John Street, Adelphi, London, W.C.2, three Cantor lectures will be given on "The Decoration and Architecture of Robert Adam and Sir John Soane, 1753-1837," by Mr. Arthur Thomas Bolton, F.R.I.B.A., F.S.A., Curator, Soane Museum, on Monday evenings, May 3, 10, 17, at eight o'clock. The first lecture will deal with the general position in English architecture at the time of Robert Adam's return from Italy in 1753, and describe the revolution of taste that he brought about. The leading ideas of his scheme of architecture and decoration, now known as the Adam style, will be fully discussed. The second lecture will continue the subject in greater detail through a selection from the most characteristic works by Robert Adam, dealing more particularly with the interiors and decoration of his famous houses. The third lecture will be devoted to Sir John Soane, and traces his relations to the movement begun by Robert Adam and to the Greek and Mediæval revivals. Soane's ideas on architecture and decoration will be discussed in relation to his more important works. In conclusion, it will be pointed out that three-quarters of a century is covered by the work of Robert Adam and John Soane. The last

lecture will be fully illustrated by lantern slides.

The State Board of Examiners of Architects have just issued a circular of information for the registration of architects in the Commonwealth of Pennsylvania. The Act requires that any person residing in or having a place of business in this State who, on July 12, 1918, was not engaged in the practice of architecture in the State of Pennsylvania, under the title of "architect," shall before engaging in the practice or being styled or known as an architect secure from the State Board of Examiners of Architects a certificate of his or her qualifications to practise under the title of "architect" and be duly registered.

At a general assembly of Royal Academicians and Associates, on April 22, Sir Robert Lorimer, architect; Mr. Henry Poole, sculptor; and Mr. Walter Russell, painter, were elected Associates of the Royal Academy. Sir Robert Lorimer, who was knighted in 1911, was born in 1864, and is the son of the late Professor James Lorimer, and brother of Mr. J. H. Lorimer, R.S.A. Educated at Edinburgh Academy and University, he studied under Sir Rowand Anderson and G. F. Bodley. His best-known work is the New Chapel for the Knights of the Thistle at St. Giles' Cathedral, Edinburgh. Mr. Russell, who was born in 1867, and trained at Westminster School of Art, is a teacher at the Slade School and also a member of several exhibiting societies. Mr. Poole was born in London in 1875, and studied at King's College, Lambeth School of Art, and at the Royal Academy Schools. He is a member of the Art Workers' Guild and the National Portrait Society, and his works appear on many public buildings throughout the country, and include sculpture at the Rotherhithe, Bethnal Green, and Deptford Town Halls, and the Wesleyan Hall, Westminster. For the past two years nothing of his has appeared at the Academy. At another general assembly, on April 23, Sir William Llewellyn, A.R.A., K.C.V.O., painter, and Mr. F. Derwent Wood, A.R.A., sculptor, were elected Royal Academicians, and Mr. Oliver Hall, painter, was elected an Associate of the Royal Academy. Sir W. Llewellyn, who was created a knight in 1918, is the painter of the State portrait of Queen Mary, which is now at Windsor, and many other portraits. Mr. Derwent Wood's works include statues of Queen Victoria, Pitt (for Peace Centenary, Washington), Sir Titus Salt, the Rev. C. H. Spurgeon, and busts of Chamberlain and Henry James, the latter being bought for the Tate Gallery. He once taught at the Slade School, and was for some years modelling master at Glasgow Art Schools. On Monday last, at another general assembly of Academicians and Associates, Mr. Julius Olsson, A.R.A., and Mr. Richard Jack, A.R.A., were elected to full membership. Mr. Julius Olsson, the Cornish sea painter, was born in London in 1864. He is a J.P. for St. Ives, where he long resided. His "Moonlit Shore" was purchased under the terms of the Chantry Bequest in 1911, and three years later he was made an Associate of the Academy. Mr. Richard Jack was born in Sunderland in 1866, and also became an Associate in 1914. At South Kensington he gained the gold medal travelling scholarship, and afterwards studied in Paris. He is a member of the Royal Society of Portrait Painters, and his picture, "Rehearsal with Nikisch," was purchased under the Chantry Bequest in 1912.

The Wouldham Cement Company, Ltd., of 35, Great St. Helens, E.C., and the Lion Works, West Thurrock, Essex, have issued two very interesting pictorial pamphlets on Portland cement, showing views of their works and quarries, the various appliances, and their methods of use, and giving some very useful information with regard to tests, specific gravity, chemical composition, and tensile strength of their cement, every ounce of which is guaranteed to fulfil the requirements of the British standard specification. The tests, it should be noted, are not those made in the Company's own laboratories, but made by experts on actual consignments, to the Bombay Municipality, the Valparaíso Port Works, the Port of

London New Offices, the National Harbour at Dover, and many others. During the war the Company's output was almost exclusively used for works of national importance. It is hardly necessary to add that the Company's works are the largest and most up-to-date in the British Isles, having an output capacity of no less than 4,000 tons per week, equal to 1,200,000 casks per annum.

Mr. F. A. McLean, of the Canadian Ingersoll-Rand Company, recommends two effective agents for waterproofing concrete, more especially when the compounds on the market, some of which are unquestionably good, but sometimes not available. The first method is to paint the concrete with a solution of one part of silicate of soda (waterglass) to five parts of water. The first coat should be allowed to dry for about six hours before applying the second. Repeat this process until four coats have been applied. In the second method the walls are painted with a mixture of 8.75 pounds of sulphate of zinc (white vitriol) dissolved in one gallon of water. The zinc sulphate acts on the lime in the concrete forming compounds of calcium sulphate and zinc hydroxide, which readily fills up the pores in the cement. Whichever solution is used, the surfaces to be treated should be thoroughly cleaned before the coating is put on.

Some prominent Welsh archaeologists are appealing for £22,000 wherewith to acquire the site of the Roman station of Segontium, at Carnarvon, for the purpose of conducting excavations on systematic lines. According to the late Professor Haverfield, there is no site in North Wales which is so likely, if systematically explored, to throw light on the condition of the country in the latest Roman and earliest post-Roman ages. Expectation is stimulated by various finds made from time to time of coins and other articles. Of these the most important were the famous gold talisman with agnostic inscription and the gold crossbow brooch of the fourth century, both of which are now deposited in the local museum at the Free Library. An expert excavator will be obtained, and he will work under instructions from Professor R. C. Bosanquet, of Liverpool. The work will be spread over two or more years, and results will be keenly followed by archaeologists in both hemispheres.

Labour is, of course, by no means at one with Dr. Addison in his crusade against what is termed "luxury" building, and is contemptuous of the style of house sanctioned by the Ministry of Health. At a meeting on Wednesday of the London District Council of the National Federation of Building Trade Operatives the position was discussed. On the question of "luxury" building it was decided to inform the London County Council that this matter should be referred to the Building Industries Consultative Board (composed of architects, surveyors, master builders, and operatives) for their considered opinion thereon and definition thereof. It was further decided that an inspection of the housing schemes in the metropolis should be made, since in many respects they were unsatisfactory and open to criticism. The inspection would be made from the "practical operatives' point of view." The contention was that it is not right to stop so-called "luxury" work and to divert labour to the building of houses "which will be little better than slums." Approval was given to what is known as the Guild proposal, for the taking over of housing schemes by the operatives and carrying them out without the intervention of contractors or master-builders.

The progress of housing schemes in Lancashire and Cheshire was under discussion at a conference opened at the Memorial Hall, Manchester, yesterday, and which concluded yesterday. It is one of a series of "regional" conferences arranged by the National Housing and Town Planning Council, attended by representatives of local authorities and associations of architects, builders, and workmen in each area. The conference discussed the new financial regulations for the fixing of rents. The chairman quoted figures from a small urban district in Lanca-

shire, where the applicants for tenancy new houses had been asked to give details the size of each family and its present accommodation. Of these 363 applicants 1 were living in lodgings, and most of the were ex-soldiers. Ninety-six said their houses were too small for them, and the houses 55 had been sold, or the landlord intended sell them. The houses of 27 people were insanitary that they were forced to leave. Altogether 131 of these families numbered 5 or more. These, said the chairman, were the people who must be considered in fixing the rents of the new houses, and it was therefore necessary that the amounts should be some where about the rents prevailing in the district.

On Wednesday another section of the National Gallery was available. A small ante-room has been hung with Italian pictures of classical and other subjects, among them the "Procris" of Piero di Cosimo, Botticelli's "Mars and Venus," and Benozzo Gozzoli's "Rape of Helen." The cruciform shape made by the dome and the four vaulted galleries has been utilised to present the general aspect of a Renaissance church. Where the high altar would be is the Ansidei Raphael, with the famous MMasaccio and the Gentile da Fabriano (lent by the King) the sides. The rest of the choir portion hung with the Crevellis. One transept given to the Venetian school and the other to the Florentines and their allied schools, and here the altar-piece by Pesellino can now be seen in its entirety, thanks to the loan by the King of several pieces from the Royal collection. Four of our largest Italian altar-pieces are hung on the walls of the dome octagon, and are thus seen in their proper scale and setting.

STATUES, MEMORIALS, ETC.

DUDDINGTON.—We are glad to see that gifts of clocks and peals of bells are in many districts being given as memorials, instead of some of the poor wall-tablets and other productions of the cemetery mason which are defacing our churches and burial-grounds. Formerly, Duddington had only one bell of indifferent musical ability, but a peal of six bells, as a memorial to 2nd Lieut. N. W. Goddard-Jackson, Northants Regt., and given by his father, has been installed. The bells are hung at present only for chiming, and in addition to the clavier they are fitted with a specially designed mechanical player, which the sexton can operate by turning a wheel. The tenor weighs slightly under 7 cwt., and is a B flat, and the peal is a product of the famous Croydon bell-foundry. Mr. Cyril Johnston, of Messrs. Gillett and Johnston, received congratulations on the charm and musical properties of the bells. Examples of Messrs. Gillett and Johnston's modern bell-hanging and tuning are to be heard in all parts of the country. Perhaps the finest is that at Wimborne Minster, where there are ten bells in ring, with a tenor of 30 cwt. Other notable examples are at Hillingdon, Middlesex; Christ Church, Crewe; Wrotham, Kent; St. Peter's, Tunbridge Wells; Wednesbury Wolverhampton; St. Peter's, Croydon; and many others, some as far afield as Lima (Peru), Madras, and Salvador (Central America). The most recent ring of bells is for the church at Carrickfergus: these are now in process of completion. The huge clock and bells of the Law Courts in London, with an hour bell of 3½ tons, were from the works of the same firm.

About 250 men are now idle as a result of the building trades dispute in Oswestry. The men have announced their willingness to abide by arbitration, but this course is not welcomed by the masters.

The Board of Trade announce that a Lighthouses Castings Sectional Committee has been appointed under the Profiteering Act to ascertain to what extent the supplies, prices, and costs of light castings in this country are affected by trade combinations.

Two thousand applications have already been received for the tenancy of houses on the Wilbraham Road estate, Manchester. The list of applications was opened only last week, when work was begun by Messrs. Sir Robert Mac Alpine and Sons in the erection of 1,000 houses under the Manchester Corporation's housing scheme. Applications are still being received.

FOR
Olivers'
Seasoned
Hardwoods,
APPLY TO—
WM. OLIVER & SONS, Ltd.,
120, Bunhill Row, London, E.C.

TENDERS.

*Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

BATH.—For roads, footpaths, sewers, and other works incidental to the development of the Englishcombe Lane housing scheme, for the Corporation:—

Macdonald, J. H., and Co., Victoria Road, Southwick, Sussex	£36.168 19 6
Ambrose, S., Green Park, Bath	23.210 7 9
Smith, W. H., Canada House, Bakwin Street, Bristol ..	22,917 17 4
Ireland, L., Lower Bristol Road, Bath	22.650 7 4
Mereweather and Sons, South- view House, Badminton, Bristol	22.450 0 0

*Recommended for acceptance.

BIRMINGHAM.—For 16 houses, Selly Oak Road, Birmingham, for the City of Birmingham Housing and Estates Department. Ingall, Bridgewater, and Porter, architects and surveyors, County Buildings, 147, Corporation Street, Birmingham:—

Percy W. Cox	£19,424 0 0
Housing, Ltd. (Blackheath) ..	19,296 0 0
G. Webb and Son	19,104 0 0
H. M. Grant and Co., Ltd. ..	18,846 0 0
Davies and Co.	17,556 0 0
W. Powke and Co.	17,393 0 0
Co-operative Builders, Ltd. ..	17,106 0 0
Smith and Franklin	17,085 0 0
J. E. Harper and Son	16,400 0 0
W. J. Whittall and Son	15,902 0 0
E. M. Squire	15,540 0 0
Henry Morgan	14,997 0 0
Andrew Reynolds	14,300 0 0
W. E. Favell	13,935 0 0

*Accepted.

BRADFORD.—For new works at Thorncliffe Road, Abin, Sharp and Son, 19, Market Street, Bradford, architect. Accepted tenders:—

Kershaw, B., and Sons, Brad- ford, masons	£1,518 10 0
Kellett, W., Bradford, joiner Groves, S., Bradford, plas- terer	710 0 0
Brooke, E. and J., Bradford, slaters	785 0 0
Rushworth, S., Shipley, plum- ber	252 0 0
.. .. .	318 0 0

DONCASTER.—For 18 houses of various types, in one or more lots, on the Wainworth Road site, for the Corporation. R. E. Ford, A.M.I.C.E., housing surveyor.

Mullins, W., and Co., Shotton Street, Doncaster	£17,080 0 0
Bate, F., Prudential Chambers, Doncaster	16,753 0 0
Sparks, G., and T., 47, Florence Avenue, Doncaster	16,613 9 8
Pearson and Blackwell, 69, Craithie Road, Doncaster ..	14,813 16 9
Bowitt and Gilbert, 16, Ceme- tery Road, Doncaster	14,536 10 5
Metcalf, J. H., Cunningham Road, Doncaster	13,043 15 10
Whittington and Hancock, Somerset Road, Doncaster ..	12,922 11 0

*Accepted.

DUNDEE.—For 38 blocks, comprising 152 houses, for the Town-Planning Committee. Principal accepted tenders:—

M'Leod and Co., Edinburgh, brickwork	£39,408 0 0
Lickley Bros., joiner's work ..	10,468 0 0
J. Shaw and Sons, joiner's work	9,164 0 0
Bruce, A., and Sons, joiner's work	8,814 0 0
Gray, C., joiner's work	8,546 0 0
Taylor, C. H., and Co.	8,463 0 0
Anderson and Son, plumber's work	8,353 0 0

LEIGH-ON-SEA.—For new house in Vernon Road, Leigh-on-Sea. Gordon Allen, F.R.I.B.A., 435, Strand, W.C.2., architect.
Goldsworthy, F. W., Leigh-on-
Sea £983 0 0

LEWISHAM.—For 16 "A" type houses and for the erection of 8 "A" type and 6 "A2" type houses, comprising the fifth and sixth sections of the Lewisham Park scheme, for the Lewisham Borough Council:—

(Section 5.)	
Open and Williams, King's Buildings, Smith Square, Westminster	£18,465 8 0
Shore, A., 38, Croom's Hill, Greenwich	18,299 0 0
Kennard, Oliver, Cecil House, Westwood Road, S.E.	17,600 0 0
Loasby, F. W., 276, Hither Green Lane, Lewisham	17,036 6 6
Sabey and Sons, 3, St. Peter Street, Islington	16,744 0 0
Pollock, W., West Park, Eltham	16,426 0 0

(Section 6.)	
Shore, A.	£24,526 0 0
Appley, John, and Sons, Ltd., Silwood Street, Rotherhithe ..	22,550 0 0
Loasby, F. W.	21,717 15 10
Pollock, W.	19,710 10 0
Sabey and Sons	19,664 0 0
Open and Williams	16,292 16 0

*Recommended for acceptance.

LONDON, W.—For alterations and additions to the Magnet Building Society, 81-83, Harrow Road, W. (second contract). G. Reginald Farrow, F.R.I.B.A., and Sydney R. Turner, Amberley House, Norfolk Street, W.C., architects:—

Jones and Andrews, Becken- ham	£5,007 0 0
Roberts, L. H. and R., Clapton Ropley, Duke Street, W. ..	2,766 0 0
Robertsons, Knightsbridge, S.W.	2,500 0 0

*Accepted.

MORECAMBE.—For the bricklayers' and masons', carpenters' and joiners', plumbers' and glaziers' and slaters' and plasterers' work required in erection of a new garage, Euston Road, Morecambe, for Messrs. Fehys, Ltd. Jackson and Jackson, 43, Church Street, Lancaster, architects. Accepted tenders:—

Hillman, H., and Son, Euston Road, Morecambe, mason ..	£1,810 1 9
Parkinson, J., and Son, Parliament Street, Lancaster, joiner	824 0 0
Blatchford, G., Meeting House Lane, Lancaster, plumber ..	520 0 0
Cross, W. J., Euston Road, Morecambe, slater	520 0 0

NORWICH.—For 102 houses on two or three estates, for the City Council:—
Facey and Co., at an estimated cost of £360 per house. (Accepted.)

OADBY.—For 28 houses, for the Oadby Housing Committee:—
Royce, W. S. £22,070 0 0

STRET福德.—For erection of houses, for the Urban District Council:—

Longworth and Maunders (ac- cepted), 157 houses at	£136,772 9 0
Matthews, W. H., 79 houses at	69,469 2 8

PINNER.—For alterations and repairs to the Parish Hall, Pinner, for the Pinner Parish Council. H. Courtenay Constantine, A.R.I.B.A., 82, Mortimer Street, London, W.1, architect:—

Iwin, C. J., 76, Station Road, Harrow	£912 6 9
Bridges, W. D., Bushey Heath Ellenent, T. A., "Hamilton," Station Road, Pinner	739 8 9
Edwardson, Ltd., Parade Garage, Love Lane, Pinner ..	699 15 0
Champ and Jerreat, 68, Bel- mont Road, Wealdstone ..	653 5 7
.. .. .	537 1 11

WESTMINSTER.—For repairs and decorative work at the Horseferry Road Mortuary premises, for the Westminster City Council:—

Guild of Decorators, The, Ltd.	£566 0 0
Sims, J. R.	425 0 0
Wright, W., and Son	395 0 0
Townsend and Pearson, Ltd. ..	392 0 0
Burton Bros.	298 0 0

*Recommended for acceptance.

YEADON.—For the construction of a covered service reservoir in concrete; also for the supply and laying of about 700 lineal yards of four-inch cast-iron pipes, with valves, etc., for the Yeadon Waterworks Co. H. A. Johnson, M.Inst.C.E., 15, The Exchange, Bradford, engineer:—

Gallagher, P. P., Oxenhope ..	£5,651 7 6
Mitchell, Arthur, Ltd., Leeds ..	4,037 19 0
Naylor, R., and Son, Brad- ford	3,920 4 6
Waterman, A., Leeds	3,781 15 0
Brigg, W., Bradford	3,765 0 0
Lees, E. and R. S., Chorlton- on-Medlock	3,547 19 3
Parker and Sharp, York*	3,440 11 8

*Accepted.

Dr. Addison, the Minister of Health, is considering (the Press Association learns) whether to declare Plymouth Town Council in default under the Housing Act. It is stated that the Council refused to send a deputation to discuss the matter with Dr. Addison when requested to do so. A public inquiry is to be held in the town to give the Council an opportunity of being heard. The Mayor of Bedford, the Council of which town has already been declared in default, has summoned a mass protest meeting for to-morrow, and Dr. Addison will be invited to attend.

A big step towards the erection of a new Town Hall was made by the Brisbane City Council recently, when the plans, specifications, and estimate of cost submitted by the architects which have the matter in hand were approved unanimously. Alderman Raymond gave notice of the following motion:—"That the Council give notice by advertisement in the usual form of its intention to borrow £480,000 for the purpose of erecting a new Town Hall according to plans and drawings approved by the Council, and also £50,000 for the purpose of acquiring additional land for the site—in all, £530,000."

If any kindly millionaire would like to do me proud

I am ready to assist him, and I crave one boon alone—

I should like a small land value, please, to call my very own.

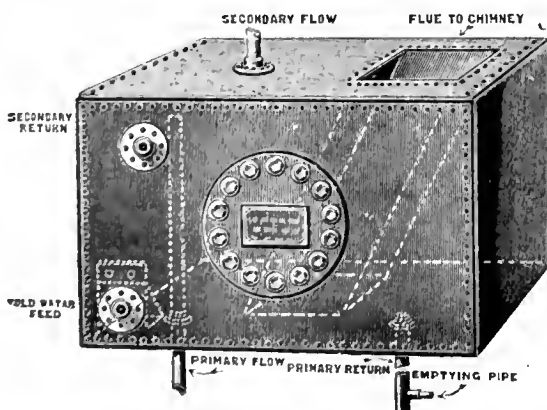
I've little left of value, and I ain't got any land.

So what the two together mean I do not understand;

But, Oh, I'd love to have one, just a sample (do not scoff).

Of the only thing the Budget's taken all the taxes off!

—LUCIO, in the *Manchester Guardian*.



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THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House.

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OUR ILLUSTRATIONS.

Proposed Reconstruction of the Interior of Balliol College Chapel, Oxford. View and two sections. Sir John J. Burnet, R.S.A., LL.D., F.R.I.B.A., Architect.
Flint House, Goring-on-Thames, Oxfordshire. Garden View of House. Mr. Ernest Newton, R.A., Architect.

Currente Calamo.

Mr. Bonar Law's speech on Monday at the Guildhall meeting was a much more sober utterance than Mr. Lloyd George's probably would have been; but his argument that "whether they were right or wrong they were committed to the present scheme" did not seem to appeal to the common sense of his hearers. Nor does it to the country. While Mr. Bonar Law was speaking a prominent Regional Housing Commissioner announced his resignation, his principal reason apparently being that the Ministry of Health is, as he alleges, lowering its standard of requirement for the new houses. People will not lend money on jerry-built property. Dr. Addison, who followed Mr. Bonar Law, and who was interrupted by shouts of: "Let the Government do it!" said there was plenty of money in the country, and that the deposits in the bank were over 2,000 millions of pounds. He was promptly corrected by Mr. Walter Leaf, the President of the Institute of Bankers, who reminded him that the deposits did not belong to the bankers but to the depositors, and that if bankers were to attempt to find money for the Housing Scheme Mr. Chamberlain would come down on them and complain that they were only adding to that inflation which he was trying to reduce. That, of course, is so; but Dr. Addison's knowledge of finance is about on a par with his general aptitude for doing the wrong thing, and the shouts of "Quite right, too!" when he declared that the local authorities were "uncertain about the financial position," exactly gauged public opinion.

The two best speeches at the Academy Dinner last Saturday night were made by Prince Albert and the President. His Royal Highness is evidently no disciple of Pussyfoot, and probably hopes, as we all do, that the more artistic signs, for which he pleads, for our public-houses, may in the near future allure the thirsty wayfarer to the participation of better liquor than is to be had to-day. It may be true that "good wine needs no bush," but the best of signs will console few for bad beer and worse whisky. But now the roads are being restored to their primal importance as means of travel and

transit, as Prince Albert said, we should all welcome the revival of the village sign or emblem, lettered, and conspicuously displayed—a welcome guide to the visitor in a strange land. As in the past, so to-day, the name of many a village would offer scope for the wit and humour of the artist. In the neighbourhood of Sandringham these village signs have been introduced with considerable success, and no artist need feel it beneath him to help in the association of art with the life of the people, for which Prince Albert wisely and sympathetically pleaded. Sir Aston Webb spoke humorously and wisely about the wages question. As he said, the problem is not a new one. It is on record that when the Adelphi Terrace was built, 150 years ago, by the brothers Adam, they, being Scotsmen, employed mostly Scots brought south for the work, and, with a view to getting the most out of the men, half-a-dozen pipers were employed to play while the men worked. The charm worked well until some of the bricklayers discovered that the current rate of wages for bricklayers in London was different to that in the North, and after that even bagpipes were no good; and so it is to-day. The great hindrance to our speedy return to prosperity and to the rapid provision of the houses we want is, as Sir Aston Webb said, the restriction of output at present enforced by the unions on the very men for whom these houses are so much required, and for which the nation is prepared to make such great sacrifices to provide. On another matter, as we all know how very permanent temporary buildings are apt to become, we shall all endorse his plea for the early removal of what are called the "Lake Buildings" in St. James's Park and the unsightly top-hampers on the Admiralty buildings at the end of the Mall, which are not only unsightly, but in considerable danger from fire.

It is more than fifty-four years since Mr. Peto Ward, the originator of the Builders' Clerks' Benevolent Institution, called on us at our old offices at 166, Fleet Street, in February, 1866, to elicit our support for its start, which was most heartily rendered, so impressed were we by the pertinence of his plea and the earnestness with which it was urged. The

first meeting he convened was held at the School Room in Peter's Street, Bishopsgate, on February 17, and though, as we remarked in our report thereof in our following issue (p. 125, Vol. XIII.), it was "more select than numerous," the strong backing given by Mr. Wheatley, from Messrs. Lee and Sons, the Chairman, and Mr. Peto Ward's eloquence at once secured the warm sympathies of all present, and a committee was formed to draft a scheme. It was, however, not till November 26, 1866, that the inaugural meeting was held at the Bridge House Hotel, London Bridge, when Mr. Alderman Lawrence, M.P., presided; but, so persistently had Mr. Peto Ward and the active and excellent first Secretary, Mr. Mullett, pegged away during the interval (see pp. 610, 783, 794, Vol. XIII.), that a subscription list of £456 was announced, and the good work has gone on well ever since. Last Friday's 39th Annual Dinner in the Royal Venetian Chamber of the Holborn was, we are glad to say, a most successful gathering, more than 250 guests being assembled, and the response to the genial and very practical appeal of Mr. Henry C. Holloway, of Messrs. Holloway Bros. (London, Ltd), the President, who occupied the chair, was a most encouraging one. As he and all the other speakers insisted, from various points of view, the reasons for the support of this most useful Institution have always been recognised, but they appeal with tenfold force to all concerned at the present time, and in view of too possible contingencies. These were forcibly portrayed by Mr. William Woodward, F.R.I.B.A., in a characteristically breezy speech, fortified by some apt quotations from the Book of Esdras, with which, curiously coincidentally, Mr. Michael Young had come armed, from which he similarly enforced useful lessons of reproof and instruction, which were received with loud applause by the instructed guests. An excellent musical programme contributed to the enjoyment of the evening. Mr. George Callister's "Joggin' Along" and Mr. Arthur Mackness's "If I might come to you" being specially favoured.

The Increase of Rents, etc., Act is still being fought over clause after clause in the Law Courts. This, of itself, shows

the shortage of dwelling space about the country and the pressing character of the housing problem. Even a small cottage suitable for a workman may be the subject of costly litigation in the High Court. This was seen in the recent case of "Wall v. Gibbs," where the point was as to the construction of the words "reasonably required by the landlord for the occupation of himself or some other person in his employ," as used in the Act of 1915. Here the landlady of a cottage let at £6 a year had given notice to quit to the tenant, stating that she wanted it for herself or her workman. The justices had made an order for possession under the Act, but the tenant appealed against this to the High Court. It was there argued that the person for whom the landlady wished to get the place was not a "person in her employ" within the Act. Evidence given showed that this man was regularly employed at some motor works during the night, having his days free. In the daytime he did work as an agricultural labourer for the landlady on her farm when required, and, on an average, he put in some eighty hours a month in that way. The High Court now held that this was an employment within the Act, and dismissed tenant's appeal, with costs. The case will affect many other similar partial occupations, more especially in country places, where these cheap cottages are now scarcer than ever.

On the 29th ult. a decision was given at the Bury County Police Court in a case heard at Radcliffe previously, in which the justices were asked to determine objections by the executors of the late Francis Mather to proposals by the Whitefield District Council for the execution of certain private streets works in connection with their housing scheme. The objection was to two apportionments and that some of the work was unnecessary. The decision of the magistrates was given at considerable length. It expressed the opinion that the cost of the proposed work could not be a charge on the frontagers. It was held that the Acts cited did not apply to cases where the authority purchased land and itself made streets. In that case authorities derived their powers under Section 154 of the Public Health Act, 1875, and the Housing Acts, and were not empowered in such cases to charge the cost to frontagers. It was perfectly clear that the cost of making all roads, upon land purchased by a local authority for the purpose of carrying out any town-planning or housing scheme, should form part of the whole cost of the scheme. The Court granted the objectors £15 15s. costs. The decision seems to us to be reasonable and worth bearing in mind in cases known to us near London where similar attempts have been made to saddle frontagers with similar costs. We hope it will be upheld if the matter is carried to the superior courts.

The Liverpool and Districts' Building Trades Federation of Building Employers

has addressed the Council complaining of its unequal distribution of contracts, and the neglect of the Director of Housing for Liverpool of their reply of December 8 last to his invitation to appoint three representatives to meet him to co-operate to carry out the recommendation of the Ministry of Health in Enclosure A of Circular 39, to agree upon a price for houses between themselves and the municipal authorities. This the Federation was most willing to do, but nothing more has been heard, and the Liverpool Corporation has pursued a diametrically opposite course, and has let practically 3,000 brick houses between only five members and one non-member. The Federation also points out that if the Corporation Committee succeed in having an Order passed to stop jobs, it will prevent proprietors of probable jobs going to the trouble and expense of even seeing an architect, having made up their minds that they might get their jobs refused. Thus it would eventually put out of work entirely the men who belong to the building industry who, under no circumstances, will be required for house building. The building trade, as is readily admitted generally, is short of labour, and more apprentices must be obtained and trained; but if the general building trade is going to be stopped, the necessary number of apprentices that ought to be taken on cannot possibly be taken on for housing schemes, which would be disastrous for the future of the building trade generally, including future house-building. Even supposing the stoppage of all large contract jobs in Liverpool, the result would be that hundreds of other men in other branches of the building trade would immediately be put out of employment, and these men are not required at the present time for houses, and the major portion of them will never be required at any time for the building of houses. In addition to this, from the builders' point of view, thousands of pounds' worth of plant and machinery are on these jobs and would be lying idle and depreciating in value. For the builders who have entered into contracts for these large jobs, the position will be very serious if the jobs are stopped, and it is preposterous that a great industry should once again be penalised by the last freak of Dr. Addison.

Somerset wants an original form of war memorial—a fire on the Mendip Hills, never allowed to go out. A memorial of any kind which depends upon regular attention will at some time or other fail to get it. If it were otherwise, surely a needless waste of fuel is not commendable. It is true, doubtless, as Gray has it in his "Elegy":—

E'en from the tomb the voice of Nature cries,
E'en in our ashes live their wonted fires.

But neither he nor Byron, we fancy, contemplated perennial cremation of the ashes in our churchyards and cemeteries. Byron's inspiring lines in "The Giaour" were:—

Snatch from the ashes of your sires
The embers of their former fires
And he who in the strife expires
Will add to theirs a name of fear
That Tyranny shall quake to hear.

We trust so, and that no soft jobs will be found for stay-at-homes, content to keep the beacon fires burning, when the next war comes, even if they were allowed to blaze on as useful guides to the enemy air-raiders.

THE ROYAL ACADEMY.

There is little change at the 152nd exhibition at the Royal Academy. None of the "Equilibrists" has been hung—perhaps they sent nothing, or perhaps their friends in journalism who have been threatening Burlington House with an earthquake if all were not hung by bunches, whoever else gave place, rather overdid the business. Anyhow, there is not a freak in the show, which, though smaller than in pre-war years, is not uninteresting. There is, it is true, no "picture of the year," and few good subject pictures. The best work is in landscape, and, very occasionally, among the portraits. The Dukes and Duchesses, and other top-notch aristocrats, plutocrats, and celebrities of the time, it is true, figure less frequently, probably because the last-named cannot afford it; and the others are selling their ancestral homes or moving from their big houses into flats, where the huge canvases favoured by artists of the past cannot be hung—or, if they could, would probably be sold to the dealers to pass on as "ancestors" to the new rich.

The general public will thank the Academicians for the sacrifice of the many "rejected," which has made it possible for the pictures to be seen in most of the rooms, where they are hung in two lines, and there is reasonable wall-space round most. The only other change is the removal of some of the sculpture to Gallery VI., which is effectively hung with some good old tapestries, which are alone worth a visit to see.

The large room, Gallery III., by no means contains the best work this year. The place of honour is given, and quite rightly, to Mr. Frank Salisbury's large panel, for the Royal Exchange, which we shall illustrate next Friday, "The National Peace Thanksgiving Services on the Steps of St. Paul's" (122). From all time the State ceremony has proved an ordeal for every painter, and few have come unscathed through it, even in the days when the attire of the participants and the adjacent surroundings made it easier to combine something like historical accuracy with the dignity of the occasion. In our judgment, Mr. Salisbury has succeeded beyond expectation, and well deserves the recognition of his work which is accorded him. Sir William Orpen seems to us less fortunate with his "Signing of Peace in the Hall of Mirrors, Versailles" (140), and with his "Peace Conference at the Quay d'Orsay" (15, Gallery I.). In both pictures, the statesmen and the other figures quite play second fiddle to the building and the furniture, none of their heads being more than two or three inches in size, and all that is visible of the German delegate is his hair, which is rumped, possibly in wrath at the peace conditions he is signing. "Mr. Minney" (136), by Mr. Walter W. Russell, the new Associate, a stout, well-satisfied looking gentleman, is one of the best of the portraits. His identity seems to have puzzled some of our earlier fellow critics, but it appears he was a well patronised model, and is doubtless fittingly immortalised by the artist to whom amongst others he sat so satisfactorily. "Mr.

Minney" died in Marylebone Infirmary in December, 1916, at the age of 66. His picture was completed some years back. He had sat to Mr. Bundy, A.R.A., for "Falls" some time before, and it was through Mr. Bundy that Mr. Russell made his acquaintance. "Michael" (129), by the late Briton Riviere, is not out of place in the large room, though it is by no means one of his best. There is also the portrait of Mr. Henry T. Hare, late Past President of the R.I.B.A., painted for the Institute by Sir William Llewellyn, R.A., a good likeness, and well deserving the praise accorded to it on the recent night of its presentation. "The Lady Parmoor" (159), one of the best of Sir John Lavery's portraits; "The Village Inn: Misty Morning," by Mr. George Clausen, R.A., and Sir David Murray's "Quay and Bay of Clovelly" (169), and his "My Heart's in the Highlands," are all well worthy of the prominence of position accorded them.

Possibly, with not the strongest batch of works to hand this year of really large room rank, the Hanging Committee have distributed some of the really best throughout the others, especially in Galleries I. and II. In the former, no one is likely to pass unnoticed Mr. George Clausen's "Shepherd Boy" (3), with its morning haze enhancing the glory of the sunrise; or Mr. Arnesby Brown's "The Mouth of the River" (11). Here, also, will be found two of Sir William Orpen's best portraits, "Sir Clifford Allbutt, K.C.B., M.D." (14), and "Mr. Leslie" (18). Here, too, Mr. Charles Sims scores unmistakably with "The Hon. Esmond Harnsworth, M.P., and Mrs. Harnsworth," and "The Terrace Overlooking the Mediterranean" (19). Sportsmen will appreciate "Epsom Downs: City and Suburban Day" (27), by Mr. A. J. Munnings, A.R.A. Another of his always welcome landscapes, "Gathering Clouds" (55), if smaller in scale than some of many admirers might wish, is delightful alike in design and execution. Mr. Glyn Philpot's "Coast of Britain" (45) is a decorative design, for a panel, of a group of early Britons, engaged in the occupations of their very early evolution.

In Gallery II. the pre-eminently dominating work is Mr. Gerald Moira's "Blessing the Gospels," at All Saints, Margaret Street, on St. Peter's Day, 1919 (86). This is, indeed, a real presentment of a great religious function, full of opportunities, taken advantage of to the utmost, of a brilliant colour scheme. Another fine picture is Mr. Bernard F. Gribble's "Scapa Flow, June 1, 1919" (89), depicting the well-remembered incident, after the sinking of the "Frederick the Great," of the attempt of the German officers to board our trawler, "The Sochosin." Twice again Mr. George Clausen figures, with his "The Turn of the Road" (64) and "The Roadside Tree" (99). Another landscape, by Mr. Arnesby Brown, "August Morning" (114); a good "Landscape" (69), by Mr. Charles Sims; "The Green Cloak: Miss Barbara Horder" (72), by Mr. William Strang; and an excellent portrait of "Lady Hastings" (77), by Mr. J. J. Shannon, are some of the most notable achievements of the respective artists in Gallery II. Last, but by no means least, mention must be made of Mr. Anning Bell's "And the Women Stood Afar off Beholding these Things" (95).

In Gallery IV. one of the best things, and indeed in the whole exhibition, Mr. J. Charles Dolman's "The Silence" (206), is about the worst hung. It is really a wonderfully impressive work. Before a Cenotaph on a great plain are grouped the numberless spectators of the ceremony of its dedication, so individually intent

that one can almost hear the words of the speakers over the wide area the extent of which is so graphically rendered. This is indeed a "War Memorial Picture," with claims to a lasting home in some War Museum of infinitely greater weight than those of some painted "to order." In this room, too, is one of the most satisfactory of the Peace Pictures—that by Sir John Lavery, of "Admiral Sir David Beatty reading the terms of the Armistice to the German Delegates in the fore cabin of the 'Queen Elizabeth' at Rosyth on November 16, 1918" (199). This is really a reliable historical record in which the absence of all effort to be dramatic has furthered a faithful realisation of the effect on all present of the supreme importance of the news the Admiral is imparting. In his portrait of "General Sir Hubert Gough" (218) Mr. Frank O. Salisbury gives ample evidence of as great ability in the rendering of average sitters as of the august personages in his great picture above noticed. "Jairus' Daughter" (211), by Mr. Wm. Strang, is good, possibly all the better for the absence of its author's more usual method, but one of the best he has given us. So is Mr. G. Spencer Watson's "The Three Wise Kings" (208); and Mr. S. J. Lamorna Birch's two landscapes, "The Don at Kemnay, Aberdeenshire" (212) and "Ladlow" (224).

Gallery V. contains a well-done "Destruction of the German Raider 'Leopard' by H.M. ships 'Achilles' and 'Dundee' on March 16, 1917" (240), by Mr. W. L. Wyllie, R.A. Here also Sir David Murray has another, "Clovelly" (250). Mr. W. B. Wollen sends a legacy from their late Lieut.-Col. R. P. Lewis that the 2nd Devons will long guard with jealous care. "Semper Fidelis" (252), the last stand that gallant regiment made at Bois des Buttes on May 27, 1918. Sir William Orpen has a good portrait of "Lord Riddell of Walton Heath" (253). Very cleverly managed is "A Woodcarver's Shop" (273), by Mr. Frederick Elwell, so successfully is the contrast of apparent disorder with well-considered composition camouflaged.

The best thing in Gallery VII. is Mr. D. Y. Cameron's Diploma picture of Durham Cathedral (325). Mr. W. Strang's "Feather Fan" (296) is good. There are several portraits in this room worth mention. "H. D. Harban, Esq." (348), by Mr. A. Stuart-Hill, is one of the best. Another is "John Keppie, Esq., A.R.S.A., F.R.I.B.A." (358), by Mr. Maurice Griffenbagen. "The Rice Family" (342), by Mr. Glyn Philpot, is, we suppose, a group of real portraits, and not merely a subject-picture. The man, and the boy drawing, are the best figures; but as a whole the work is not an attractive one.

In Gallery VIII., "The Supreme War Council, Versailles, July, 1918" (385), by Mr. Herbert A. Olivier, is one of the highest and best of the War Pictures. It looks real—none the less so, perhaps, because the people portrayed are not posing. Another attractive work is Mr. J. Young Hunter's "The Old Santa Fe Trail" (366), a veritable Mexican sun-bath. Miss Isabel Codrington is also to be heartily congratulated on "The Fruit Sellers" (374), as fine a study in still life as we have seen for a long time. The contrast between the dark interior and the blazing sunshine outside is excellently managed, and the figures of the man and woman are well rendered. The other noticeable work in this room is "The Consecration of Reading Abbey by Thomas A'Beckett in the presence of King Henry II." (405), by Mr. Stephen

Reid, which is destined for the Reading Art Gallery.

In Gallery IX. we get to the small things; among them, however, not a few of interest and merit, such as Mr. Charles Sims's "A Lady of Hammersmith" (478); "A Misty Morning, Lyme Regis" (451), by Mr. Frank Dicksee; "At Madonna del Orto, Venice" (488), by Mr. Henry Woods; and "A Studio Corner" (477), by Mr. Harry F. Van der Weyden.

Gallery X. contains one of the best pictures in the whole exhibition, "Oratio Oblivæ" (561), by Mr. Walter Bayes. It is the interior of a cinema theatre, wherein the faces of the audience look as miserable and scared as those in his raid picture of the refugees in the Tube. There may, of course, be two opinions about the matter, but our own is that Mr. Bayes is perfectly right, and that the horrors and inanities of most of the films, especially on the faces of three-turn Saturday night audiences, do produce the jaded overstrained vacuous expression shown. As a picture, the general treatment is admirable, and the clever management of the flicker of the beam of light thrown on the screen is very ingenious.

Gallery XI. contains "Lamorna Cove" (618), a brilliant combination of colours, admirably reflected on the sea in the bathing cove; and another sea-picture by Mr. Bernard F. Gribble, "The Last Convoy" (622). There is also a good portrait of "Mr. Delissa Joseph, F.R.I.B.A.," by Mrs. Lily D. Joseph; and another of "Lord Kensington" (621), by Mr. S. Melton Fisher.

THE SCULPTURE.

The sculpture, as usual, is poor. Sir George Frampton sends nothing, and probably others are too busy with memorials. It is therefore a little difficult to understand why it was necessary to give up Gallery VI. for the display of the few additional works located there. Where additional room was wanted was in the corner cupboard that does duty as the architectural room, to which Gallery X. might well be added. The best of the sculpture is in the Central Hall, mostly by Mr. F. Derwent Wood, R.A., and Sir W. Goscombe John. Mr. Derwent Wood's works are far and away the best shown, his busts of Marshal Foch (1451), in Gallery VI., M. Clemenceau (1321), and Mr. Hughes (1409), are very good, the listening attitude of the last, with hand to ear, being very characteristic. Sir Goscombe John shows several groups and reliefs for the Sunlight War Memorial (1317, 1320, 1323, and 1326), and a bronze bust of Mr. Edmund Gosse. Mr. Gilbert Bayes has a good bronze group, "The Young Diana" (1348); and a relief, "Not today only, but the Future thanks thee" (1357), a relief forming part of the Law Society's War Memorial. Mr. W. R. Colton sends a bronze bust of Mr. Asquith (1392), and his Diploma Work, a marble head, "The Young Diana" (1461). Mr. Allan G. Wyon is represented by a satisfactory marble group of "The Sorrows of Mankind" (1464). Mr. Paul Montford's bronze statue of "A Water Nymph" (1436) does him credit. Mr. John Tweed is to be congratulated on his busts of "Max Michaelis, Esq." (1379) and of "Colonel Willoughby Verner" (1416). Mr. Alexander J. Leslie's bronze statuette of "Iphigenia" (1387) is excellent, and so is his silver statuette "Reverie" (1453). Mr. W. Reid Dick has a fine bronze head, "Joan" (1390), and a bronze statuette "Chloe" (1454). Mr. Henry Pegram's relief bronze, "Mater Desolata" (1404); Mr. Alfred Drury's marble bust of "The late Lady Glen-

Coats" (1443); and Mr. F. W. Pomeroy's group, "Dr. Thomas Guthrie" (1418) deserve honourable mention.

There is no big piece of statuary in the courtyard this year. Possibly no conquering hero could be persuaded to mount another such fiery steed as the King of the Belgians bestrode last year!

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

At the meeting of the Royal Institute of British Architects, last Monday night, the annual report was discussed, and, we believe, was adopted. The following is an abstract:—

THE REPORT.

The Report opens with brief particulars of the work of some of the Committees appointed to report on various matters, among whose members the losses by death have been as set out, together with a record of the death of 11 associates, 9 licentiates and 23 students and probationers who fell in the war. Particulars of these are given later in the Report.

MEMBERSHIP.

The following table shows the present subscribing membership of the Royal Institute compared with the preceding five years:—

	Fellows.	Associates.	Hon. Associates.	Total.
1915	857	1,713	54	2,624
1916	852	1,679	52	2,583
1917	842	1,656	48	2,546
1918	838	1,631	45	2,514
1919	834	1,720	46	2,600
1920	863	1,773	44	2,680

During the official year since the last annual general meeting 56 fellows and 168 associates have been elected, as against 12 fellows and 120 associates the previous year. There are now 1,715 licentiates on the roll. Since the publication of the last annual report 13 licentiates have passed the examination qualifying for election to the Fellowship, and 8 have been duly elected as Fellows.

THE EXAMINATIONS.

During the year 135 candidates for the Probationership have furnished the Council with satisfactory evidence of their attainments, and have been registered as Probationers. The Intermediate and Final Examinations have been held once only during the official year—viz., in June. The following table giving results of the examinations shows that 45 students have been added to the register during the year, and that 9 candidates have passed the Final or Special Examinations qualifying for Associateship:—

	Ex- empted.	Ex- aminated.	Passed.	Rele- gated
Intermediate examina- tions	42	4	3	1
Final and special ex- aminations	—	18	9	9

In addition 106 candidates have passed the Special War Examination, and of these 63 have been elected as associates, and 104 war candidates have been exempted from the Final Examination and have qualified for Associateship. The statutory examination qualifying for candidature as District Surveyor in London was not held in 1919.

THE R.I.B.A. RECORD OF HONOUR.

According to the Royal Institute records, members, licentiates and students who served with the Forces during the war number altogether 79 fellows, 540 associates, 336 licentiates, and 300 students. The list, however, is still incomplete, and members whose names have not been received are asked to send them to the secretary.

THE R.I.B.A. PRIZES AND STUDENTSHIPS.

After a lapse of five years the award of prizes and studentships has again been made. In spite of the recent demobilisation of many of the younger men, a good number of drawings were submitted and the standard of excellence was notably high.

THE UNIFICATION OF THE PROFESSION.

The most important task that faced the Council at the beginning of its year of office was that of giving effect to the widespread demand for the unification and better organisation of the profession. The matter was

taken in hand at the first meeting, and a Charter Committee was appointed to deal with the scheme, which had to be laid aside at the outbreak of the war. The Committee were rapidly convinced that wider and more far-reaching proposals than those of 1914 must be contemplated, and they submitted to the Council a recommendation in favour of the appointment of a new Committee representative of the whole profession which should be entrusted with the duty of preparing a broad scheme of unification and registration. The Charter Committee's report was unanimously approved by the Council and, on March 22, by a Special General Meeting of the Royal Institute. The various bodies concerned are now appointing their delegates, and the first meeting of the Unification Committee will take place towards the end of May. The large amount of evidence and information of a most instructive character collected by the "Future of Architecture Committee" will be handed over to the executive of the Unification Committee as soon as it is appointed by the latter body.

ARCHITECTURAL EDUCATION.

The Council are watching with the keenest interest and sympathy the rapid developments that are taking place in the methods and machinery of architectural education. The "Recognised Schools" are full to overflowing after the lean years of the war, and the short courses which in the past qualified students for exemption from the Intermediate Examination are being supplemented by longer courses which, it may be, will justify the Board of Architectural Education in recommending the exemption of graduates from part, if not the whole, of the Final Examination. At the same time, the constitution of the Board is being considered with a view to strengthening its representative character and qualifying it more fully for its task of guiding and controlling the course of architectural education. The Council welcome the completion of the scheme by which the Royal Academy has undertaken the co-ordination of the work of the several ateliers for advanced students. The Board of Architectural Education are considering the possibility of endowing one or more scholarships or prizes to encourage the work of the ateliers. An extension of the scheme to the larger provincial cities should do much to raise the standard of design throughout the country, and it is hoped that the councils of the larger allied societies will play their part in the development of the system. In connection with the foregoing, members may be reminded that a bequest which will have a value of not less than £5,000 has been received by the Royal Institute under the will of the late Sir Archibald Dawnay. The income from this bequest is to be devoted to the furtherance of architectural education, and a scheme for the foundation of a scholarship or scholarships is now being developed.

THE GOVERNMENT AND THE BUILDING TRADE.

The Council have been deeply concerned throughout the session with the problem of the re-establishment of the building trade. In forming the Building Industries Consultative Board—a body representative of the four sections concerned: the architects, the surveyors, the contractors, and the operatives—they hoped to provide an instrument which would at the same time help the trade to deal effectively with its own internal problems and serve as a guide to the Government in its dealings with a great and complex industry. After an exhaustive examination of the position as it existed at the termination of the war, in which it received the most valuable assistance from the Director of Building Materials Supply, Mr. G. E. Drower, and a frank interchange of views between the representatives of all sections, the Board came to the unanimous conclusion that the most vital need of the moment was the removal of all forms of Government control over the activities of the industry. This opinion was accordingly conveyed to the Government by a personal letter to the Prime Minister and by communications to the Departments concerned. In this action the Council were indebted to the Society of Architects for constant co-operation and support. The Council

regret that up to the present their representations have failed to convince the responsible authorities, who now find themselves faced with difficulties in the National Housing Scheme which they are endeavouring to remove by placing still further restrictions on the industry generally. The Council have repeated their protest and they trust that the Allied Societies and the members generally will do their utmost to bring pressure to bear upon Members of Parliament and the Government with a view to the removal of such restrictions. The Building Industries Consultative Board further endeavoured to contribute to the improvement of conditions in the industry by issuing and circulating throughout the country a vigorous appeal to all concerned to redouble their efforts to improve production and to remove the existing causes of friction, delay, and uncertainty.

NATIONAL HOUSING SCHEME.

No effort has been spared to secure the success of the National Housing Scheme. A specially reduced scale of payment for architects engaged in this work was negotiated with the Ministry of Health, and conferences are now taking place with the object of removing certain anomalies that have shown themselves in practical working. The Council have repeatedly urged upon the Ministry of Health the vital importance of entrusting town-planning and housing schemes only to those who possess full professional qualifications and of assisting demobilised architects by spreading the work as widely as possible over the whole profession. Difficulties and delays have arisen in many cases in which the Ministry have failed to carry out the policy recommended to them.

CONTROL OF COMPETITIONS.

The Competitions Committee have reported to the Council an unusually large number of competitions the conditions of which have been at variance with the regulations. As a result of the energetic and prompt action of the Committee, these conditions have in many cases been satisfactorily amended. In this work they have received constant assistance from the Allied Societies and the Society of Architects. The Council desire to call the attention of members, and particularly of those in the provinces, to the fact that the effective supervision of competitions in the interests of the profession and of the public depends largely on the promptitude with which individual members call the attention of the Committee to unsatisfactory competitions, and to the loyalty with which members generally support the action of the Committee and the Council in dealing with the promoters of such competitions. The Competitions Committee have drafted a set of model conditions for Housing Competitions which are about to be published.

THE REVISION OF THE CONDITIONS OF CONTRACT.

The National Federation of Building Trades Employers have prepared a new Building Code without consultation with the Royal Institute, and have given notice of their intention to withdraw from the Agreement arrived at in 1903. The R.I.B.A. Conditions of Contract Committee have reported to the Council the completion of their work in revising the R.I.B.A. Form, and the question of its immediate issue for the guidance of members is now before the Council.

THE REFORM OF THE LONDON BUILDING ACTS.

A strong Committee has been formed to consider and report upon the question of the reform of the London Building Acts. Proposals for an amending or consolidating Bill will be prepared, and a conference with the L.C.C. Building Acts Committee will be arranged as soon as possible.

PROFESSIONAL CONDUCT AND PRACTICE.

The draft of a new Code of Professional Conduct and Practice has been circulated by the Council to the Standing Committees and the Councils of the Allied Societies. The very favourable comments received from these bodies are now being considered by a Committee of the Council and the amended draft will be adopted and published at an early date. It is intended to issue the new Code in pamphlet form together with the President's Inaugural Address and Address to

Students and Mr. Paul Waterhouse's lecture on Architectural Education.

THE REVISED SCALE OF CHARGES.

The Revised Scale of Charges was approved at a Special General Meeting on May 12, 1919, and copies of it have been distributed to every member and licentiate. It has been officially adopted by the Society of Architects, who have received permission to reprint it for issue to their own members.

THE PRESIDENT OF THE ROYAL ACADEMY.

The President and Council had the pleasure of presenting a congratulatory address to Sir Aston Webb, Past-President, on the occasion of his election as President of the Royal Academy. Sir Aston is the first architect who has ever occupied this position.

REPORT OF THE HON. AUDITORS FOR 1919.

"We have carefully examined the books and checked the various items therein with the accounts and vouchers for 1919, together with share certificates held by the Institute and list of Share Certificates deposited at the Bank, all of which were found to be in order and to agree with the balance-sheet prepared by the Accountants. It will be noted with satisfaction that the overdraft of £825 1s. on December 31, 1918, has disappeared, and in place of this there is now a credit balance of £1,298 3s. 10d. It should be pointed out that this result has been obtained through exercising the strictest economy during the year, with the consequent restriction of the activities of the Institute. The amount received in subscriptions and arrears considerably exceeds that of the previous year. We note that the valuation placed on the premises, namely, £35,622 7s. 3d., in the year 1914 still stands, and we are of the opinion that a revaluation should be made, in order that the correct figure may appear in the next balance-sheet. The work of the Institute has been carried out in a very efficient manner, and the staff is to be commended for the way in which they have carried out their duties."

The Council submit a rough estimate of income and expenditure of ordinary funds for the year ending December 31, 1920, exclusive of entrance fees, showing an estimated deficit of £3,050.

DISCUSSION.

Discussion followed, but, in accordance with the not unusual practice of the R.I.B.A., our reporter was not allowed to take notes, as the annual general meeting was "private."

In the course of a speech he made, Mr. William Woodward, F.R.I.B.A., said he believed that Dr. Addison was a very eminent surgeon. He was suddenly removed from that sphere and put to something he knew nothing whatever about. (Laughter.) He (the speaker), although an architect, might on the same principle be set to perform surgical operations. He would probably kill a good many people if he did.

"My firm belief," he said, "is that no good will come to Dr. Addison's department until it is on its way to that very interesting place the road to which is said to be paved with good intentions." (Laughter.)

THE NEW COUNCIL.

The three extra nominations of Fellows delivered on Monday last over and above the House list for the Council of the Royal Institute of British Architects were Messrs. Percival M. Fraser, C. Lovett Gill, and Delissa Joseph. The names of the retiring members are Messrs. Sir John J. Burnet, LL.D., R.S.A., J. I. Joass, Professor Lethaby, C. Stanley Peabach, Andrew N. Prentice, G. Gilbert Scott, A.R.A., H. D. Searles-Wood, and Professor F. M. Simpson. The extra Associate members nominated on Monday were Messrs. Leonard H. Bucknell, Robert Lowry, and Harold Goslet. The retiring Associates are Messrs. W. R. Dalvage and E. Stanley Hall, M.A. The new names in the House list among the Fellows are Messrs. H. Martinne Fletcher, M.A., G. Topham Forrest, J. G. Gibson, E. V. Harris, Sir Edwin Lutyens, R.A., Sidney Perks, W. Edward Riley, and Sir Charles Rutben. The new House list Associates are L. B. Bludden, M.A., Owen Fleming, Leonard Rome Guthrie, Stanly

Hamp, W. Godfrey Newton, M.A., and Herbert Arthur Welsh. For election as Vice-President the only outside nomination received was Mr. H. D. Searles-Wood. Considering the momentous matters arising from the recent resolutions unanimously passed by the Institute for the unification of the profession it is most desirable that more interest generally among the members should be taken in this election, and that a really large proportion of the electors will fill in and return the ballot papers. A Council elected by a large vote can claim to be truly representative of the Institute and obtain a stronger position to deal with the important subjects to be determined during the next twelve months.

The House list of present Fellows on the Council still standing for election are Messrs. Robert Atkinson, Major H. Barnes, M.P., Max Clarke, II. P. B. Downing, Sir Banister Fletcher, W. Curtis Green, E. Stanley Hall, Geo. Hubbard, F.S.A., H. V. Lanchester, T. Geoffrey Lucas, and Paul Waterhouse. The Associates on the present Council are Professor Abercrombie, M.A., and Messrs. Horace W. Cubitt, J. S. Harrison, and D. Lewis Solomon, B.Sc.

The President, Mr. John W. Simpson, and the Vice-Presidents in the House list, Professor Adshead, and Messrs. Walter Cave, A. W. S. Cross, M.A., and E. Guy Dawber.

COMPETITIONS.

BRADFORD-ON-AVON WAR MEMORIAL COMPETITION.—The Competitions Committee desire to call the attention of Members and Licentiates to the fact that the conditions of the above competition are unsatisfactory. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime, Members and Licentiates are advised to take no part in the competition.

CLETHORPES PEACE MEMORIAL.—**ARTHURET WAR MEMORIAL.**—**WARDS HILL IMPROVEMENT, BATLEY.**—**LOCKERIE WAR MEMORIAL.**—**HORNSEY WAR MEMORIAL.**—Members and Licentiates of the Royal Institute of British Architects must not take part in the above competitions because the conditions are not in accordance with the published regulations of the Royal Institute for architectural competitions.

GATLEY WAR MEMORIAL COMPETITION.—The Competitions Committee desire to call the attention of Members and Licentiates to the fact that the conditions of the above competition are unsatisfactory. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime Members and Licentiates are advised to take no part in the competition.

The death is announced, on May 2, at The Lee Manor, Great Missenden, Bucks, of Dame Emma Louisa Liberty (widow of Sir Arthur Lasenby Liberty), in her 75th year. The funeral was at The Lee Church on Thursday.

Professor Ludvig Wimmer, the well-known philologist, died at Copenhagen on April 29 at the age of 81. His special subject was the Scandinavian languages. He was best known for his book on the *Runic Alphabet*, in which he showed that the Runes were really letters adapted for carving in wood, and his four volumes of Runic inscriptions in Denmark.

The Church schools of St. Luke's are to be repaired and redecorated at the charge of the London County Council. The Council have made the offer to the managers that they may employ their own labour—that is, the skilled men in the hostel working under trade union conditions. But the hostel has no ladders and none of the materials necessary to start on such a job—neither has it the capital to get them.

On the motion of Mr. W. W. Green, who said that the lack of office accommodation in the City was greatly hampering our export trade, the City Corporation have referred to the City Lands and Bridge House Estates Committees the consideration of the question as to what steps it was practicable to take to enable buildings to be carried to a greater height than the present restrictions of the London Building Act imposed.

Our Illustrations.

PROPOSED RECONSTRUCTION OF THE INTERIOR OF BALLIOL COLLEGE CHAPEL, OXFORD.

Balliol College was founded in 1282, and the original statues are still in the possession of the authorities. Nothing structurally exists of earlier date than the middle of the fifteenth century, and these parts are found in the walls of the hall and library forming one of the sides of the first quadrangle. In 1868 the late Alfred Waterhouse, R.A., rebuilt the whole extent of the south front buildings towards Broad Street and the return façade. His block is characteristically distinguished by much variety of detail. The College chapel adjoins the library, which is located to the north of the great quadrangle, the hall being situate on the west. The entry to the chapel has a pleasing doorway set under an ogee canopy. This chapel is the fourth used by the society since the foundation of this college. In 1857 William Butterfield, the foremost ecclesiastical architect of his day, built this, the last of the series, at a cost of £8,000. He carried out the work in an original and capable manner. The gabled front, with its fine geometrical east window, is well proportioned, and has always been deservedly admired. There is a remarkably tall turret attached to the chapel, as shown by one of the plates published herewith. Butterfield fitted up the interior of his building with some elaboration, especially the sanctuary, which he enriched with Derbyshire alabaster, and at the west end he erected a stone screen capped by some light ironwork in an incongruous manner, for Butterfield was by no means invariably successful in such matters of detail, specially in designing wooden fittings and wrought ironwork. From time to time several architects were employed by this college, among them being Henry Keene, George Basevi, and Antony Salvin, who, in 1852, designed and built a new block for the Master and Fellows at the northern extremity of the Grove. Wyatt, at the end of the eighteenth century, re-arranged both the hall and the library.

The present project, illustrated by the accompanying view and sectional drawings, is from the design of Sir John J. Burnet, R.S.A., LL.D., F.R.I.B.A. His scheme comprises the reconstruction or refitting of the chapel. Our illustrations are reproduced from the architect's originals now on view at the Royal Academy Exhibition, opened to the public on the 3rd inst. We have for the moment no further descriptive particulars of the contemplated work.

FLINT HOUSE, GORING-ON-THAMES.

Last week we gave the Royal Academy drawing lent us by the architect, Mr. Ernest Newton, R.A., showing the entrance front of this Oxfordshire county house erected at Goring-on-Thames. To-day we publish the second perspective, also now at Burlington House, and drawn by Mr. Cyril A. Farey, illustrating the garden view of the building. Particulars about the work appeared with the previous picture.

Mr. Thomas Ambler, of Broomhill Moor, Allerton, Leeds, retired architect, and formerly member of the City Council, died leaving £45,000.

Mr. Ewen Harper, Moseley, Birmingham, the late architect and a prominent Wesleyan Methodist, has left estate valued at £63,242. A number of Birmingham institutions benefit under the will.

Correspondence.

THE IDEAL HOUSE.

To the Editor of THE BUILDING NEWS.

Sir,—What is meant by the ideal working man's house? Probably the house which shall be built as nearly perfect as man can make it. It shall have sufficient rooms for the proper housing and the requirements of the family who are to occupy it. These rooms shall be so arranged that the least labour is required on the part of the person performing the various duties of the house, and the various fittings shall be in the proper positions for carrying out these duties.

The general present-day requirements for these houses are a living room, parlour, scullery, larder, coals, w.c., front and back entrances on the ground floor; three bed rooms and a bath room on the chamber floor. But it is not only necessary to provide this accommodation, the rooms must be in their proper places, and the entrances arranged for the comfort, convenience and privacy of the occupants. This depends entirely on the scullery and its arrangements.

Do the houses which are being built and the plans which are being approved by the Government fulfil these requirements? With very few exceptions the back entrance is direct into the scullery; a door in an opposite wall gives access to the living room. There are many objections to this arrangement, and nothing to be said in its favour, unless it may be the saving sometimes of a few cubic feet of space. In the scullery are carried out all kinds of housework, and although this is not exactly private, it sometimes happens that the occupant is engaged on work which she does not wish to have talked about. Then it is the custom of the male members of the house (and very often the female, too) to have their wash at the scullery sink. This does not apply to the working classes alone. Many people who would feel aggrieved if they were ranked with the working classes regularly wash and dress in the scullery. There is nothing wrong about this, and if people like to make a dressing room of their scullery they should be able to do so in privacy. If a friend calls to see a member of the family, he may come to the back entrance. If he is asked in, he has to pass through the scullery no matter what is being done there at the time. Mendicants are sometimes tempted to steal from the scullery, given favourable opportunities. But the greatest trouble of this arrangement is in connection with the usual weekly washing day. When this work is being carried on the scullery is more or less full of steam and the floor very wet. The door into the living room would be constantly open, the steam passing through the living room and the whole house saturated with and smelling of washing. Every time anyone goes into the living room they take wet from the scullery floor with them. One of the ideal houses has the w.c. on the chamber floor, or, rather, on the "half pace." Suppose there are several children (and this does sometimes happen) running in and out, after washing, to the w.c., taking the wet from the scullery floor not only into the living room, but into the hall and up the stairs? It may be argued that with a lavatory in the bath room, with hot and cold water laid on, washing in the scullery would cease. This is not so, particularly in cases of men employed in dirty trades. It is their custom; they are bred and brought up to this and will not alter it. In a large Midland town a new mayor had been recently elected. The chief of police, wishing to communicate with him, sent a letter by a constable who was a stranger to the town. On his return he was asked if he saw his worship. He replied that he did not know, but he saw a chap washing himself at the pump in the yard.

When a load of coal is had in, it has to be carried (not wheeled) through the scullery and into the coal-house. Surely this is not an ideal arrangement. How has this state of things come about? Probably the principal cause is the publication of the "Recommendations of the Board of Health" in which there are illustrations of plans of

houses which have apparently been prepared by some one whose only knowledge of the requirements of the working classes has been obtained in a London office, and has seen the rows of small houses on some of the outskirts of London. The majority of the plans which have been appearing of late in the building papers have a strong family-likeness to these plans, although some are even more badly arranged, notably some where it is necessary to pass through the scullery and the front hall to get to the living room, the scullery opening direct into the front hall.

An architect, writing as to the arrangements of this class of house, said, "Architectural and aesthetic requirements had to be considered." Probably a little good common sense would produce a better plan.

Anything in the shape of verandas is out of place in buildings of this class in this country; there is not sufficient sun to warrant the cost of their erection.

It is quite possible to arrange a plan with a front entrance hall from which the parlour, staircase and living room are reached, a back entrance lobby giving access to the living room, scullery, larder, coals and w.c., the scullery and living room doors being close together. This arrangement gives, first, privacy to the occupants of the house, convenience in working, greater protection from draughts, and therefore more comfort.

It is the custom in many working-class districts where there are streets of working men's houses, without any breaks between the various rows, and where the scullery and outbuildings project beyond the main building, to build a small lobby between the living room and the scullery, entirely for securing privacy to the scullery and to prevent steam and the smell of washing from getting into the main block of the house. If the women who have to live in these houses were given the choice of houses with lobbies and without, they would all choose the former.

In one of the building papers a few weeks ago there were some plans illustrated which had back entrance lobbies, but they would have been much better if the scullery had not opened direct into the living room. Then, again, there were some plans the author of which could not have known the use of some of the fittings he provided, or the danger of placing the boiler where it is least required, when it might have been put in its proper place and just as useful for the second purpose.

There are many instances where borough surveyors and surveyors to district councils have undertaken to prepare plans for local housing schemes on the ground of economy, who are quite incapable of preparing these plans, and may perhaps have had the assistance of an architectural assistant to do the work, most likely with not the best result. Advertisements for architect assistants for such purposes have been numerous in the building papers during the past two years.

Some two years ago there were competitions for working men's houses promoted by the Royal Institute of British Architects. In our district there were a large number of plans submitted in four classes. These plans showed a remarkable want of knowledge on the part of the competitors and assessors. As an illustration, one of the conditions said that the sculleries were to be sufficiently large to be used as an occasional sitting room. One firm of competitors secured two first premiums of £100 each, their plans showing a scullery some 16 feet long and about 6 feet wide, sink at one end and boiler at the other end, and no fireplace was provided. This would be an "Ideal" sitting room!

ION ELLIS.

Rushall, Walsall.

DEPREDACTIONS IN TIMBER BY BORING INSECTS.

Sir,—May I be allowed, on behalf of the Science Standing Committee of the R.I.B.A., to draw attention to the prevalent defects which arise in converted timber due to the depredations of boring insects?

Cases have come to notice in which paneling and like work has become riddled with holes in a couple of years owing to these

ravages, which occasionally cause serious defects in constructional work also.

My committee, with the assistance of Dr. Gahan, of the Natural History Museum, are anxious to investigate this subject, and will be grateful for any specimens of such defective wood with as much information as possible as to its location and history. It is hoped that by this co-operation on the part of your readers investigations may lead to the publication of a monograph upon the best means for preventing these attacks and of treating wood suffering from incipient defects of this character. Specimens should be addressed to the Hon. Secretaries, Science Committee, 9, Conduit Street, Regent Street, W.—I am, Sir, your obedient servant,

ALAN E. MUNBY (Chairman).

THE ASSESSMENT OF ENGINEERING UNDERTAKINGS.

A paper on "The Assessment of the Poor Rate of Engineering Undertakings" was read before the Society of Engineers on the 3rd inst., by Mr. W. G. Cooke, A.R.I.B.A., Assoc. Inst. C.E., member of Council of the Society of Engineers, in the Apartments of the Geological Society, Burlington House, Piccadilly.

There was a large attendance, including many members of the legal profession, who practise in parochial rating.

The subject was divided into two parts. The first, dealing with those companies, such as gas and water, where the rateable value was ascertained from the yearly accounts as issued to their shareholders; and the second, such as general engineering works, breweries, and the like, where the rating is ascertained on the basis of cost and adaptability of the premises to the particular trade carried on. The subject of high rating has, for some time, been prominently before all those responsible for the economic working of all engineering concerns brought about by the recent labour movement of diminished number of hours constituting a day and the advance in the rate of wages, the change affecting every department of engineering life. Mr. Cooke showed how the working expenses being increased, the hypothetical tenants' share (a further deduction) was also increased by the high prices of meters, tools, and other chattels.

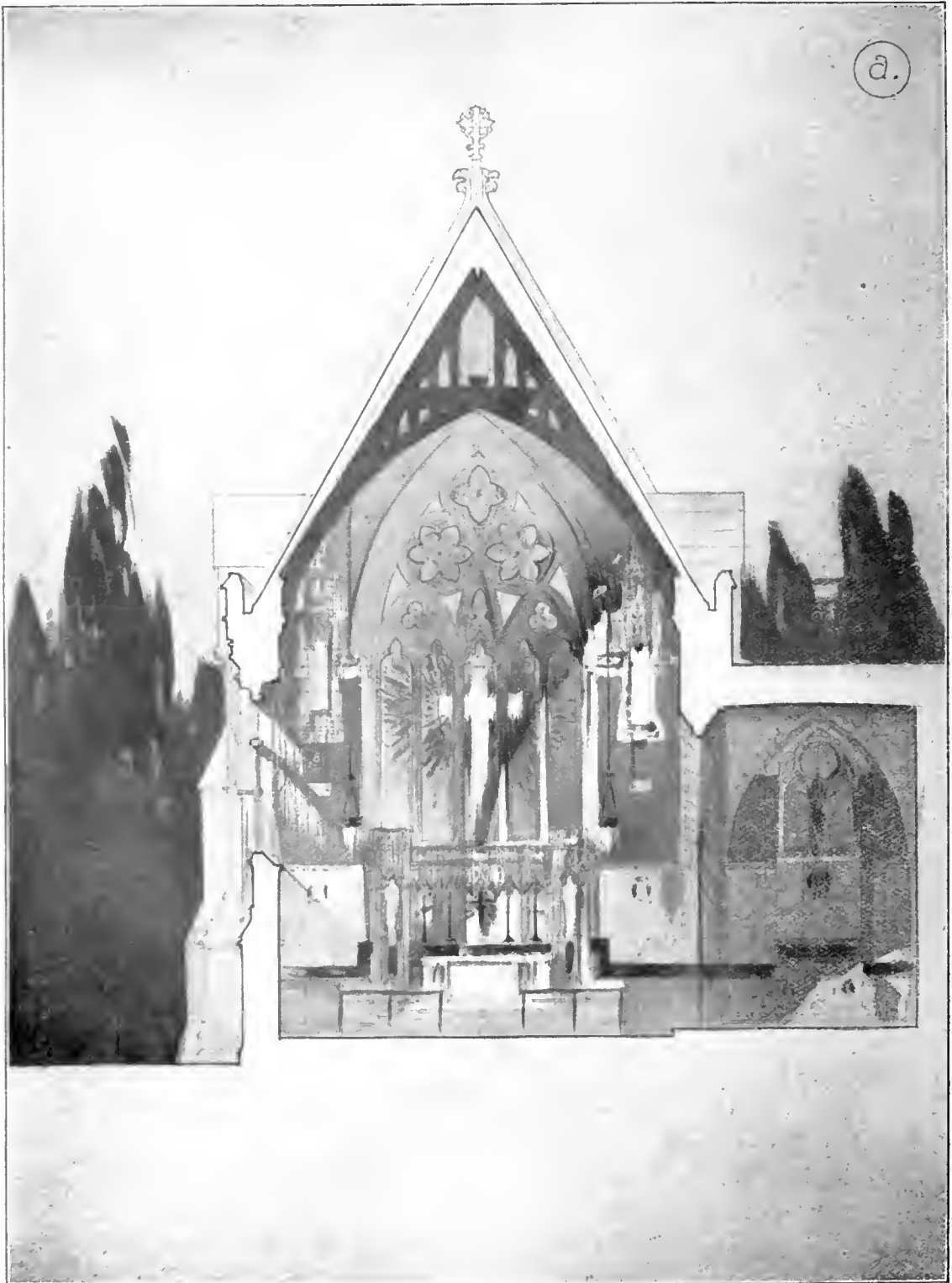
The most marked increases were in the statutable deductions, that is, over the cost of repairs, renewals, and insurance, or, to put it in one word, "upkeep." The cost has gone up from 200 to 300 per cent. over pre-war figures, and even if the gross value, according to the statutory definition, were unaffected, the rateable value, or basis upon which the rates are payable, would be considerably reduced. This latter phase would, perhaps, be more distinctly noticeable in the second class of hereditaments, because, where no variation of either income or working expenses can be brought in, one gets to look upon the gross value as a fixed or unalterable figure, where no enlargement of building or additional machinery has taken place or been installed.

An animated discussion followed, Mr. Cooke replying to questions put to him by various speakers, and it was generally acknowledged that a most instructive paper had been dealt with in a way to clear the minds of all those who are charged with the management of engineering concerns.

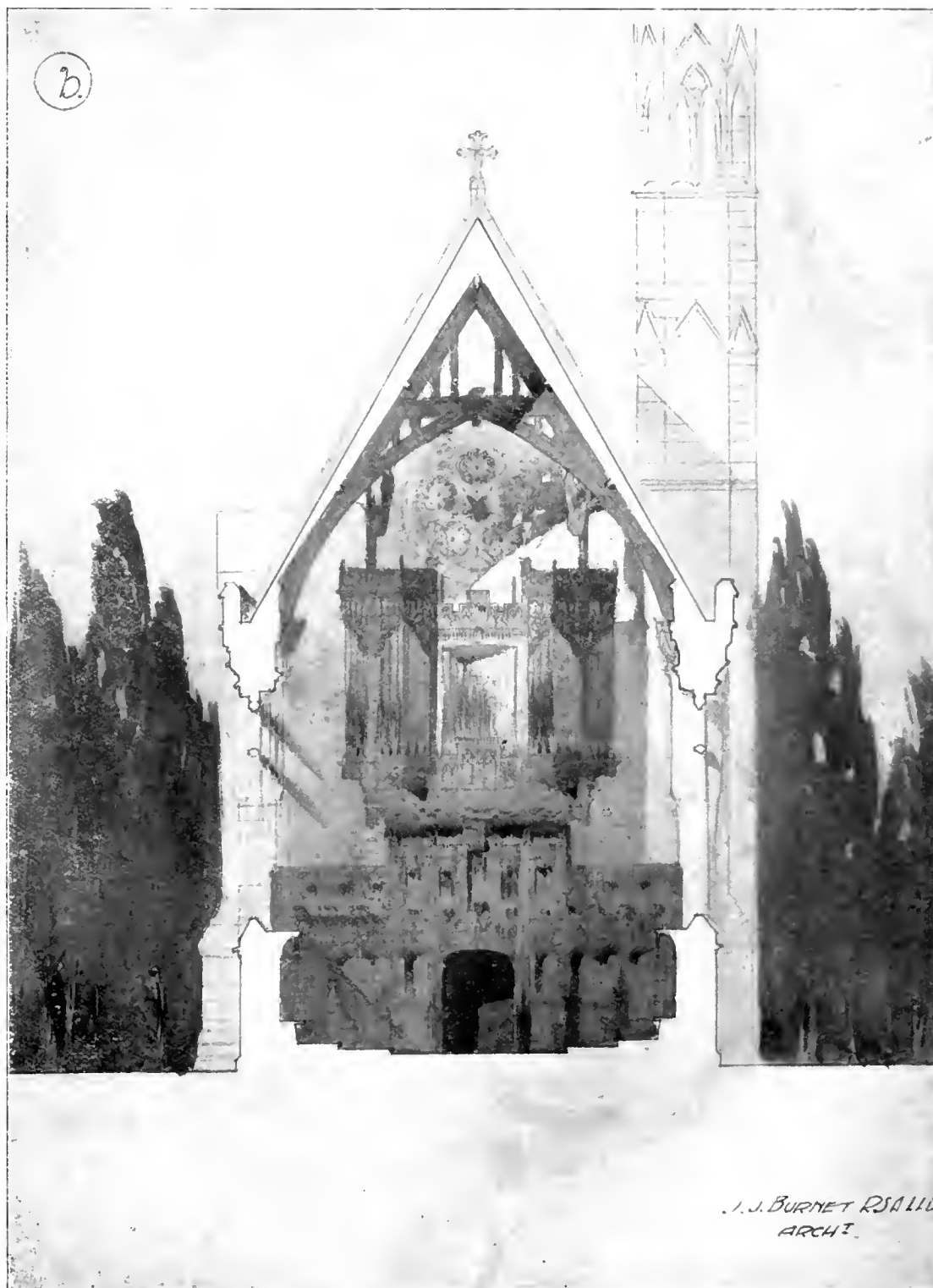
The Oldham Town Council have approved of the erection of 1,000 houses. They are making a start by the building of forty-eight houses on the Hollins site, and the first sod was cut yesterday.

The Engineering Faculty of Bristol University needs enlargement, and the Merchant Venturers, in whose college it is maintained, have decided to make the necessary alterations, additions, and re-equipment at a cost of about £11,000.

Apprentices, employers, and journeymen are alike invited to take part in the competitions which are being organised by the National Painters' and Decorators' Joint Education Committee. Write for particulars to the Secretary, Will Mellor, c/o W. G. Sutherland, 9, Albert Square, Manchester.



PROPOSED RECONSTRUCTION, BALLIOL COLLEGE CHAPEL, OXFORD.
Sir JOHN J. BURNET, R.S.A., LL.D., F.R.I.B.A., Architect.



PROPOSED RECONSTRUCTION, BALLIOL COLLEGE CHAPEL, OXFORD.
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355-6.

THE BUILDING



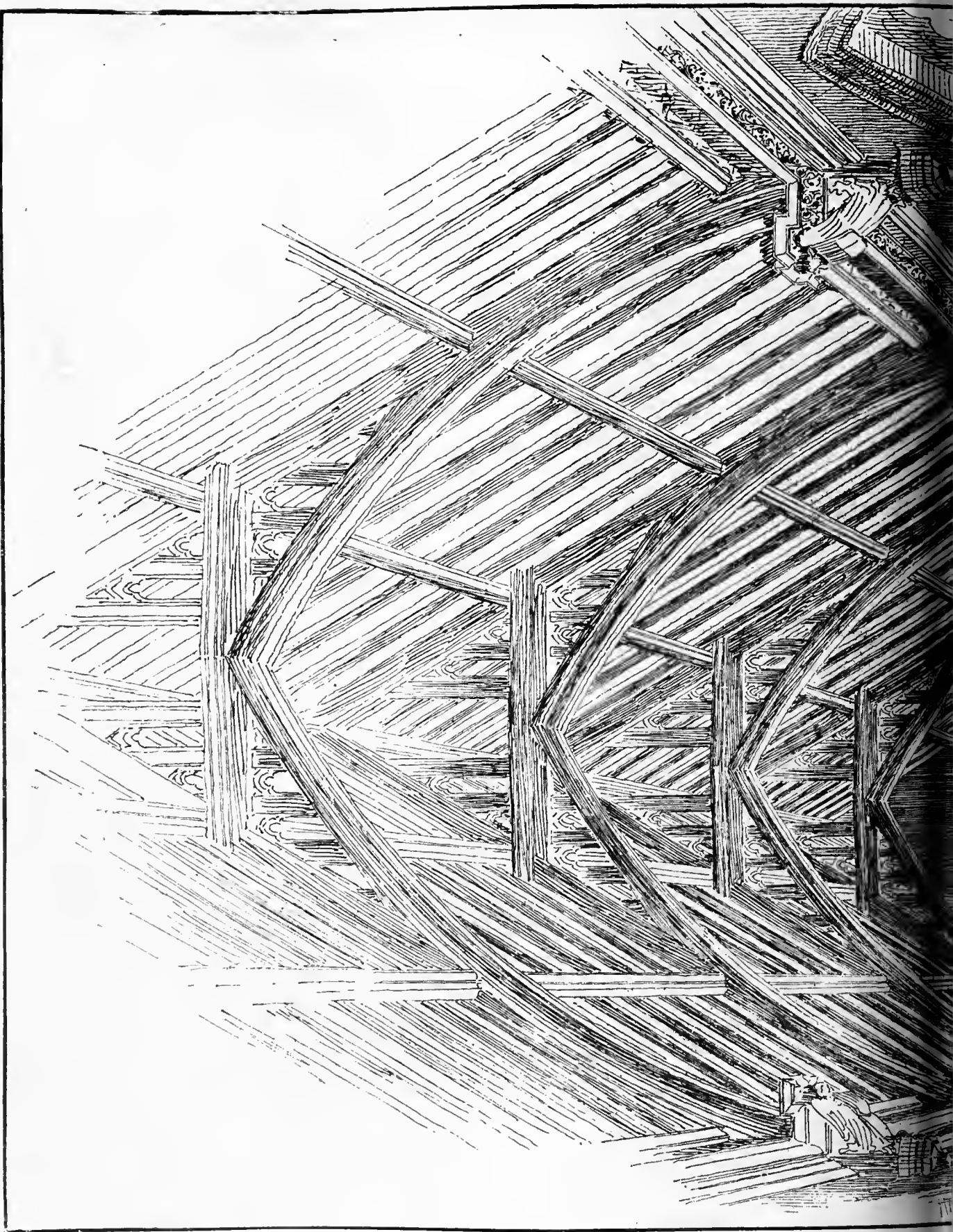
FLINT HOUSE, GORING-ON-THAMES
Mr. ERNEST N.

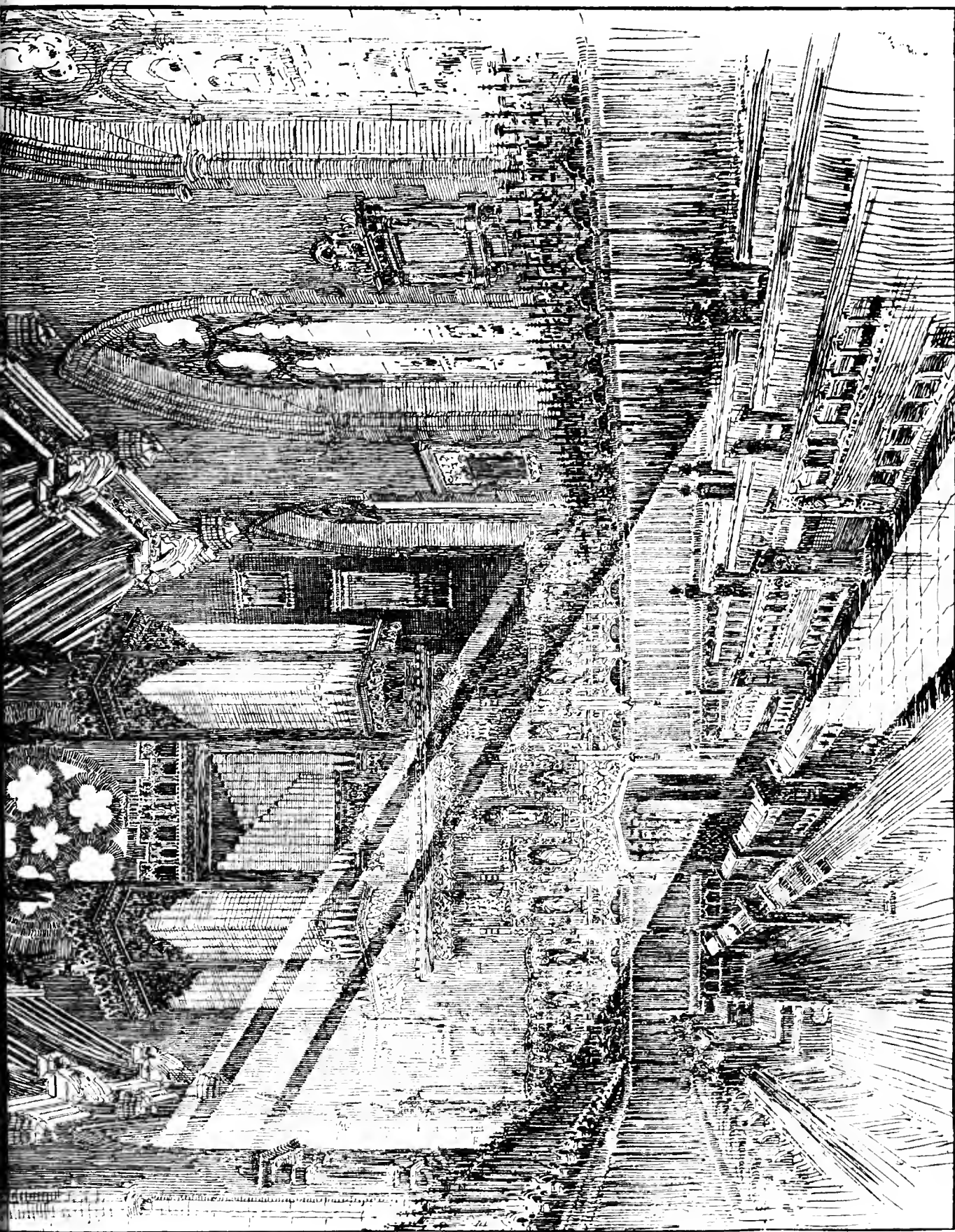
MAY 7, 1920.



OXFORDSHIRE : GARDEN FRONT.
FA., Architect.

357-960.





PROPOSED RECONSTRUCTION TO INTERIOR OF BALLIOL COLLEGE CHAPEL, OXFORD.

Sir JOHN JAMES BURNET, R.S.A., LL.D., F.R.I.B.A., Architect.



THE BUILDERS' CLERKS' BENEVOLENT INSTITUTION.

ANNUAL DINNER.

The thirty-ninth annual dinner of the Builders' Clerks' Benevolent Institution, held at the Holborn Restaurant on Thursday last week, was very well attended, some 250 members and friends being present. Mr. Henry T. Holloway (President) was in the chair, and amongst those present were Messrs. William Woodward, F.R.I.B.A., Michael Young, F.S.I., E. G. Gayer (President of the London Master Builders' Association), Walter Lawrence, Roland B. Chessum, and F. Beverley Farquharson.

In proposing the toast of "The Builders' Clerks' Benevolent Institution," the President said that there was a shadow of a great industrial dispute in the building industry, and he hoped that the operatives would fall in with the employers' suggestion that the matters in dispute should be referred to the Conciliation Board. Referring to the work of the Institution, he mentioned that the pensions had recently been increased from £30 to £40 per annum for men, and from £24 to £30 per annum for women, and the benefits were being granted to the children of both present and deceased pensioners. His latest appeal, he announced, had resulted in subscriptions for about £600.

Mr. Roland B. Chessum, proposing "The Architects and Surveyors," said that the builders admired the skill and claimed the indulgence of architects, who were the source at which the building industry began, and combined with the quantity surveyors to arrive at a happy conclusion not only of the erection of the building, but also for the payment of the bill. Builders all desired the closest and friendliest intercourse with the members of the two professions so that they might achieve a satisfactory conclusion of their enterprises, which were really necessary for a happy existence.

Mr. Michael Young, F.S.I., briefly responded.

Mr. William Woodward, in proposing "The Builders and Builders' Merchants," said that housing demanded the greatest skill, experience and technical knowledge, but unfortunately the Ministry of Health was directed by men who "do not know, and do not know that they do not know" anything about it, and great dis-service had been done to the country. In what was acknowledged to be one of the finest letters written on the subject of luxury building, Mr. J. W. Simpson, the President of the R.I.B.A., had pointed out that the prohibition of luxury building would result in great unemployment amongst the skilled tradesmen, who would be entirely unsuited for work on housing schemes, but this Dr. Addison had characterised as "rubbish." To imagine that housing schemes would be helped by stopping luxury building was a sign of absolute madness—the skilled men were not those who could, or would, devote themselves to cottage building. Dr. Addison had said that he would not guarantee that existing contracts and commitments would be allowed to proceed, but he little knew what the effect would be. The operatives also, he was pleased to say, had realised that the stoppage of luxury building would also stop house-building. In connection with a building with which he was interested he had been informed that a bricklayer had laid 120 bricks per hour on two days running. Fifty years ago the average was 1,000 per hour on ordinary work and 1,200 on foundations; now it was 120, and the same reduction in output was noticeable in all the trades. This organised idleness was a great source of difficulty, and until it was corrected houses would not be produced. A further difficulty was the disinclination of the trade unions to admit ex-Service men into their trades. He expressed the hope that by the end of the year the responsibility for housing matters would be in the hands of experts, and not of men who did not know what they were doing.

Mr. F. G. Gayer, responding, said that in consequence of the output of labour he had very great doubts as to whether the prohibition of luxury building would achieve its object, and the shortage of labour was not alleviated by the fact that the operatives had

curtailed their hours of labour. If the erection of houses was stopped owing to the cost, and if other work was prohibited, the building industry would rapidly sicken for a fever. The operatives had made a demand for an immediate advance of 1s. per hour, and for certain "trimmings" amounting to another 6d. This represented an increase of £3 6s. for a 44-hour week, and would add enormously to the cost of a cottage.

Responding on behalf of the builders' merchants, Mr. Farquharson asked them not to believe that the whole of the increased cost of materials was profit.

The toast of "The President" was proposed by Mr. Walter Lawrence, and a brief response by Mr. Holloway terminated a very enjoyable evening.

PARLIAMENTARY NOTES.

TIMBER CONTROL DEPARTMENT.—Sir Robert Horne, President of the Board of Trade (Glasgow, Hillhead, C.U.), informed Mr. Palmer on Monday that an account of the transactions of the Government Timber Buyer had been prepared to March 31, 1919, and a further account relating to the year ended March 31, 1920, was in course of preparation. The transactions were very numerous, and the account for last year was not likely to be completed before the end of June. He proposed at a later date to lay a statement before the House relating to the operations of the Timber Control Department as a whole. Mr. Palmer.—Will this statement differentiate between the commission paid to Mr. Meyer and the salaries paid to the staff? Sir R. Horne.—I think all the items of the accounts will be disclosed. Brigadier-General Croft (Bournemouth, N.P.).—Will the right hon. gentleman give an undertaking that all this timber will be sold by two years after the date of the armistice? Sir R. Horne.—I do not quite know what my hon. friend means by all the timber. I think all the timber that was in stock a year ago has been sold, or, at any rate, the bulk of it. Mr. Lambert (Dorset, South Molton, L.).—Is this Department still carrying on operations, or is it being wound up? Sir R. Horne.—It is only carrying on for the purpose of winding up. Mr. Houston (Liverpool, West Toxteth, C.U.).—Is the right hon. gentleman aware that there is a large amount of cut timber in the country lying about rotting? Sir R. Horne.—I do not know about rotting, but I know that there is a certain amount still to be disposed of.

ACQUISITION OF VOID HOUSES APPROVED.—In the House of Commons on Tuesday, Mr. Hallas asked the Minister of Health whether he was aware that the Smethwick Corporation are finding it necessary compulsorily to purchase houses and to order the occupation of others that are being kept void for the purposes of sale, and whether he would take steps to remind other local governing bodies of their powers and duty in this respect. Dr. Addison: Yes. In similar cases I am recommending local authorities to use their powers under the Housing Act for the acquisition of houses.

Mr. S. B. K. Caulfield, F.R.I.B.A., will address the Efficiency Club on Tuesday, May 11, at the Central Hall, Westminster (7.30 p.m.). The title of Mr. Caulfield's lecture is "An Inefficient on Efficiency," and discussion will follow.

The estimated cost of the Imperial War Graves Commission for the current financial year, says Mr. Winston Churchill in Parliamentary papers, is £2,787,009. Of this amount £515,039 falls to be borne by the self-governing Dominions, India, and the Colonies. The number of officials and other employees of the Commission on May 1 was 1,181.

The President has suggested that the Royal Institute should take occasion to entertain and welcome home its members who have returned after serving in H.M. Forces during the war. The proposal is cordially supported by the Council and—in view of the large number concerned—they have decided to hold a reception and garden-party at the Zoological Gardens on the day following the first anniversary of the signing of Peace (June 29 next). Tickets will be issued to each member and licentiate (with a lady) on application to the secretary R.I.B.A.

Our Office Table.

The Metropolitan Paving Committee, which suspended its operations during the war, held its first meeting at the Westminster City Hall last week, after being reconstituted. Sir Alpheus Morton (City of London) was unanimously reappointed chairman. The committee, which consists of representatives from the cities of London and Westminster and the Metropolitan borough councils, has been engaged, since its inception in 1902, in collecting and disseminating authoritative information about the life, cost, wear, etc., of all descriptions of street paving laid down in the County of London. Attention was called to the great difficulty which is being experienced by road authorities in carrying out street paving works, owing to the lack of transport facilities and the shortage of materials, particularly tar slag. It was decided to write to the Minister of Transport on the subject.

Every freak of every Government Department is followed by some flagrant violation by the Government of the control it is sought to impose. As the Secretary of the London Master Builders' Association points out, in a letter to the *Times* last Monday: "At a time when so much commercial building work is being stopped in London, with the object of diverting labour to the housing schemes in outlying districts, it is a source of wonder why a substantial building such as the Inns of Court Hotel should be demolished for the purpose of erecting a telephone exchange. One would have thought, if an exchange is really needed, that a building of this character would lend itself to an easy and economical conversion, as a temporary measure, until such time as the general position had altered. Further, the building in its present form could be easily adapted for office accommodation, or, possibly, residential flats."

A mass meeting of Bedford ratepayers last Saturday night protested against the decree of the Minister of Health declaring the town in default in house building, and making the inhabitants liable to pay the loss on 400 houses which the Ministry propose to build. The Mayor (Mr. Sowter) said that letters and telegrams were coming from all parts imploring Bedford to hold fast in the matter. The Mayor recited the history of the question since 1917, and described numerous interviews, conferences, letters, plans, and schemes to show that the greatest efforts had been made to get the Ministry of Health to accept a practicable scheme. Although in Bedford there was developed building land for over 600 houses, the Ministry turned down existing estates on which roads were made and sewers laid, and had preferred two other sites which had to be prepared *ab initio*. The Corporation thought it must be a saving of time and money to utilise existing building estates. They could build at £250 less per house than the cost of the type of house required by the Ministry, for which a rent of over £1 per week would be necessary, although the bulk of the houses in Bedford were below £20 a year. It was impossible for a small town like Bedford to raise nearly half a million of money. It was some centuries since a Minister of the Crown had exercised the powers claimed by Dr. Addison, when he acted as prosecutor, judge and jury. Any Act of Parliament which conferred such powers must be repealed. If Dr. Addison wanted to see another Ireland in England he had only to declare three or four more boroughs in default. A resolution was unanimously carried, emphatically endorsing the action of the Bedford Town Council. The meeting also demanded a local inquiry to be held by a Court constituted in the manner usually prescribed by the Ministry of Health.

The "Centa machine," which is being introduced by a Swedish concrete machinery company, is about to be introduced into this country. It is designed to make hollow concrete blocks on quite a different principle from those with which we are familiar, all the air compartments being topped by a roof. The idea is that damp is likely to be more

effectually excluded in this way than by a continuous cavity in the wall. It is also claimed that economy in cement, perfect air isolation, and economy of labour are guaranteed by the machine to a greater extent than in others. The representative of the company, Mr. Manne G. de Lagarant, of 46, Stanhope Gardens, S.W.7, is at present in London, and he will be glad to interview any architect or others interested.

At the meeting of the Birmingham City Council on Tuesday, on the report of the Finance Committee, Alderman David Davis referred to the recent Housing Bonds campaign, saying the result must necessarily be that municipalities would have to tell the Government they had made the effort and failed, and that if they desired houses to be built in this country it was up to the Government to find the money. The recent issue of three millions Corporation stock had been quite satisfactory in its results. He pointed out, however, that the Council were committed to an expenditure of nearly seven millions, and he appealed to the Committees of the Corporation to abstain from putting forward any schemes which, no matter how urgent, they felt might wait for a short time. If that advice were accepted there was no cause for alarm. In the course of the discussion on the subject, Mr. Bower contended that a capital levy must come, and Mr. Dean's solution of the financial problem was to call upon the landowners to contribute to the rates in proportion to the capital value of their land.

The results obtained after a two years' investigation of the fire-resisting qualities of concrete columns by the Pittsburgh Laboratories of the U.S. Bureau of Standards, directed towards determining the effect of the kind of aggregate, the kind of reinforcement, and the form of the column, are published. Nearly all the round columns were 18 in. dia. and the square columns 16 in. side. No reinforcement was placed nearer than 1½ in. to the outer face. All the columns were 8 ft. 9 in. long. For the concrete the proportion 1:2:4 was adhered to throughout, and the age of the specimens ranged from six to nine months. During the test the working load was kept on the column: if the column withstood the 600,000 lb. load it was permitted to cool, transferred to the 10,000,000 lb. machine and tested in that. The poorest results were given by the gravel-concrete columns, reinforced both vertically and spirally. After approximately 30 minutes of firing in a gas furnace, under temperatures ranging up to 1,000 deg. C., cracks began to appear in the surface of the concrete. Once started, the progress of the cracks was rapid; the outer concrete soon broke away in slabs, so that after the first hour the column proper was only partially protected, and after the second hour practically not at all. There is strong evidence that the inferior behaviour of the gravel-concrete was due to expansion, although the Pittsburgh gravel used is not made up of pure quartz pebbles, but contains a much larger proportion of sandstone and other harder rock, all appearing to be high in quartz. The best results were obtained from concrete columns with a limestone aggregate, reinforced both vertically and spirally. The extended use of a limestone aggregate is accordingly recommended in localities where it is available.

No figures have been disclosed by the authorities as yet of the total amount subscribed to the Birmingham Housing Bonds, but it is fairly evident that the money is not coming in as freely as could be desired. The stream of investors was chiefly composed of persons of small means who took up bonds of small denominations. The bonds will remain on sale for a period to which no limit has as yet been fixed, after last week's very high pressure propaganda, but delay in making contributions seems to point to a poor total.

The Council of the Institution of Civil Engineers have made the following awards for papers read and discussed during the session 1919-1920: Telford Gold Medals and Telford Premiums to Mr. David Lyell, C.M.G.,

C.B.E., D.S.O. (London), Mr. J. K. Robertson (London), and Major-General Sir Gerard M. Heath, K.C.M.G., C.B., D.S.O., R.E. (London); a George Stephenson Gold Medal and a Telford Premium to Mr. Maurice F. Wilson (London); a Watt Gold Medal and a Telford Premium to Mr. P. M. Crosthwaite, B.A.I. (London); Telford Premiums to Major E. O. Henrici, R.E. (London), Sir Francis J. E. Spring, K.C.I.E., M.A.I. (London), Mr. F. O. Stanford, O.B.E. (London), Mr. James Mitchell (Hursley), Mr. J. W. Sandeman (Newcastle-on-Tyne), and Mr. A. R. Fulton, D.Sc. (Dundee). The awards for papers published in the proceedings without discussion will be announced later.

An exhibition of recent accessions, by gift and purchase, to the Department of Engraving, Illustration and Design, has been arranged in Room 132 of the Victoria and Albert Museum. The exhibits include a group of old master drawings, mainly from a recent bequest by the late Bernard H. Webb, notably those by Perino del Vaga, Primaticcio and Perugino, together with some important ceiling designs by Sir James Thornhill. Modern draughtsmanship and design is well represented by a series of original studies by Frank Brangwyn, R.A., for his painted decorations in the Great Hall of the Skinners' Company, and by a collection of drawings by the late Sir E. J. Poynter, P.R.A. The Poynter drawings range from sketches for details of the Museum Grill Room, the Ashanti War Medal and other decorative work, to figure studies for well-known paintings, such as "Israel in Egypt" and "The Catapult." Several water-colour and pencil drawings by Samuel Palmer, are exhibited, together with a fine series of his etchings, chiefly the gift of the late Mrs. J. Merrick Head, of Bath, at one time an intimate friend of the artist. An item of kindred interest is shown in a first proof of Edward Calvert's woodcut, "The Ploughman," which Calvert gave to Palmer in the early days of their friendship, when both were young and ardent disciples of Blake. Among modern etchings recently acquired are examples of Bauer, Chahine, Lepère, McBey, Robins, Strang, Shepperson and Zorn. Among lithographs of note are those by Brangwyn, Charles Shannon, J. Poortenaar, G. Bellows, Jones, etc., while the revival of woodcutting is represented by the work of Gibbins, Ludovic Rodo, Raffé, Molly Power and Mrs. Raverat. Two original poster designs, made for the Underground Railway, by E. A. Cox and F. Gregory Brown, are shown side by side with copies of the posters as published. Of special interest are some designs for Norwich printed fabrics and shawls made in the early part of last century. In their combination of black and purple, and use of "jazz" patterns, they strike a curiously modern note.

The Ontario Association of Architects decided to raise their scale of fees, and the minimum charge for services will henceforth be: For factories and large plain buildings involving no detailed interior finish, 5 per cent. of the total cost, in place of the former charge of 4 per cent. For public buildings, office buildings, warehouses, banks, and ordinary buildings, 6 per cent. in place of 5 per cent. For residences, from 8 to 10 per cent., according to the amount of special detail work required, in place of the former charge of from 7 to 10 per cent. The total cost of the building is now interpreted to be the cost to the owner of the completed building, including any material or labour that may be supplied by the owner apart from the contracts. The only other important alteration is that whereby charges are to be increased to cover the cost of the services of a specialist when required in the case of heating, ventilating, mechanical, electrical and sanitary problems of a special nature. The new schedule is not inaugurated on account of the increase in the cost of living as that is taken care of by the increase in the cost of construction which, of course, augments the amount of the fee to the architect, but to the greater service that an architect is being called upon to give at the present time in the design and construction of buildings.

CHIPS.

The district office of Mr. John Todd, district surveyor for East City, has been removed to 36, Lime Street.

Mr. Hughes, the Australian Prime Minister, declares that if the building employees insist on a 40-hour week the Repatriation Department will be compelled to discontinue building soldiers' homes.

A handsome processional cross, designed by Mr. W. D. Caroe, has been presented to Oxshott Church, Cobham, by Mrs. Clarke as a thankoffering for the preservation during the war of her husband, Brigadier-General J. L. J. Clarke.

"You may thank the moulders' strike for the absence of cheap excursion fares this year," remarked a railway official to a Press representative last week, adding that the present shortage of locomotives was one of the outcomes of that dispute.

Despite the shortage of houses in Monmouthshire, the men in the building trade in Newport are to have shorter hours. From Monday last they will only work a five-day week of forty-four hours. This, it is stated, is to be tried "as an experiment."

Messrs. Northcroft, Neighbour, and Nicholson, 55 and 56, Chancery Lane, and Messrs. Adam K. Bell and Son, 6, King's Bench Walk, have been admitted to the list of firms of quantity surveyors to be employed by the City Council for architectural work.

Plymouth Town Council decided on Tuesday to take no part in yesterday's inquiry by the Ministry of Health into the manner in which the Council has fulfilled its obligations under the Housing Act. This refusal is a protest against the unconstitutional and arbitrary action of the Minister in arriving at a decision condemning and threatening it before conferring. But the Council has recorded its willingness to meet the Ministry in "friendly conference."

Lambeth Borough Council has received tenders for the erection of houses on two different sites. The price for building sixteen houses at Redan Terrace, Flaxman Road, Brixton, was £13,002, or £813 a house, and for sixty dwellings at St. Louis Road, Norwood, £51,500, or £858 a house. The Council have deferred acceptance of these tenders. Councillor Bishop has pointed out that already the Council has expended over £13,000 on the schemes, and not a house is yet built.

At the Leeds Police Court, on Monday, Hector Smith, aged 16, was charged with breaking five panes of glass, valued at £2, the property of the Leeds Fireclay Company, Limited, in the engine-house with a view to operating the machinery. The boy told the magistrates that he did it to obtain knowledge and his mother said the boy had a mania for studying. The boy was bound over in his own recognisances of £10 to be of good behaviour for twelve months, and ordered to make good the damage.

In connection with the reopening of the Hotel Victoria in Northumberland Avenue today, Messrs. Waygood-Otis, Ltd., have supplied and fitted three passenger lifts, each with a speed of 200 to 300 ft. per minute, and with usual control by attendant in the car. There are also two luggage lifts, controlled similarly, and arranged for a lift-speed of 160 ft. per minute. The six service lifts are arranged so that they can be sent or called automatically to or from any floor. In addition to the foregoing, there is another electric lift for general purposes and a hydraulic basement lift.

The painters, plumbers, and decorators of Dudley, when presenting themselves for work at seven o'clock last Monday morning, found their employers' premises closed. The masters, while agreeing to a 44 hours' week, as adopted by the local branch of the National Federation of Building Trade Operatives, were opposed to the arrangement of the hours, and the whole-day holiday on Saturdays. Consequently, the employers posted up the following notice:—"Pending a settlement of the hours for working, we shall commence at eight o'clock, finishing at five o'clock from Monday till Friday, with one hour—12.30 to 1.30—for dinner. Saturday, 8 o'clock to 12 o'clock, commencing May 3." Under the new conditions the men would be required to get breakfast before going to work. The employers opened their workshops at 8 o'clock yesterday morning, but practically all the workmen had then left the premises. The masters will continue to open their shops at 8 a.m. until a settlement has been arrived at, and deny that their action constitutes a lock-out, as alleged by some of the men.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

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Strand, W.C.2

OUR ILLUSTRATIONS.

The National Peace Thanksgiving Service, July 6, 1919, on the Steps of St. Paul's Cathedral, London. Panel for the Royal Exchange. Painted by Mr. Frank O. Salisbury. Royal Academy, 1920
New Chemical Laboratories for the University of Liverpool. View and Plans. Messrs. F. G. Briggs and Arnold Thornely, F.R.I.B.A., Architects. Royal Academy, 1920.

Currente Calamo.

The Architectural Association is shortly issuing an appeal for a large sum for the purpose of endowment. As all our readers are aware, the Architectural Association is the leading educational body in the architectural world; but, unlike the schools at the Universities, it is entirely unendowed, and relies entirely on the support of the profession generally and the fees that it receives from its students. No organisation has done as much for architectural education in the past as the A.A., and none can carry on the work as effectively as it is doing, and will do in the future still more so, if the coming appeal is adequately responded to as it should be. We hope to give ere long a preliminary list of subscribers to the endowment fund, and to see that list added to promptly and liberally.

We are very glad Mr. Delissa Joseph made the very useful speech he did at the "private" annual general meeting on May 3. As he truly said, "the report showed a great deal of good work commenced, but a very small amount of good work actually accomplished. One could see evidences of the initiative of the President, who throughout his year of office had always shown himself receptive to new ideas, and there was much reason to hope, from the various movements which had been set going in the Institute during the past twelve months, that valuable results would accrue. But, looking for practical issues, he was bound to say that the report was disappointing." So it is. It is a little unfortunate that the continuous efforts of the best President the R.I.B.A. has had for many a long year are not seconded by the Council in the live fashion that characterises every movement of the Society of Architects, whose every opportunity is seized by the executive of securing that publicity which is the guarantee of success. It is therefore most satisfactory that Mr. Joseph concluded his speech by moving: "That the Council be requested to call a public meeting of architects, surveyors, builders' operatives, property owners, members of Allied Societies and other bodies interested, to protest against the present method of applying the 'luxury clauses' of the Housing Act, and with the view of sending a delegation to

the Prime Minister." It is true that the Chairman said that "practically" the same thing was put before the Council the same afternoon. One of the Metropolitan Magistrates told a witness a few days ago that "practically" was a stupid word. It very often is, and we are glad the Chairman accepted Mr. Delissa's motion, which, we are glad to see, Mr. Herbert W. Wills seconded. We hope the meeting will be held at once, and that the President, who never fails to carry his audience by his tact and knowledge how to say the right thing at the right time, will not be hindered by any of the Council, or others who are not seldom so anxious that the R.I.B.A. shall figure as the doer of right things which it ought to have done long ago, as to carry with it and voice the great body of outside public opinion, which is the only lever that can lift from us the scandalous and crushing burden which the Government has thrust upon us at the stupid instance of Dr. Addison. We say "stupid" most emphatically, because we are certain that, as Mr. Ernest Newton was reported to have said a few days before, his view was very strong that if all the building restrictions were removed the impetus to the building trade would be such that the housing schemes would correspondingly improve.

Mr. Chamberlain told the House last week that of 1,292 members of the Land Valuation Staff little more than one-fourth of its strength when the war began—only a small proportion, costing £6,500 a year out of a total salary list of £468,000, are now engaged on work connected with the land values duties, and that they will be disbanded as soon as taxpayers cease asking for repayment. He promises full details before the Select Committee on National Expenditure, that they may investigate the expenditure of the department and "give an impartial verdict." He said much help has been given to the Ministry of Health in acquiring land for housing purposes, and that the same Ministry will yet derive considerable further advantage from assistance of this kind. The Ministry of Health has an infinite capacity for finding needless employment for favoured protégés and it was probably hoped that the Land Valuation Department would still get the credit for the £460,000 that is still being absorbed by

Dr. Addison's and "other Government offices"! A bit of camouflage which we are all obliged to Mr. Chamberlain for unveiling.

Another of them—we beg pardon, only a sub-committee this time! The Prime Minister, alarmed at the very slow progress of the Government's housing scheme, has decided that prompt steps must be taken to expedite it, and has asked Sir L. Worthington-Evans to preside over a sub-committee, which will report as speedily as possible on the measures to be taken to secure a better supply of labour for the Government building programme, which was fixed at 200,000 houses for the present year. The Minister of Health, it is stated, has protested against the vast building schemes put forward by various Government Departments and sanctioned. He alleges that their prosecution, in the present scarcity of labour and materials, constitutes a grave hindrance to the development of the housing programme. The sub-committee has therefore been given full powers to call for reports and evidence, and to scrutinise every building scheme estimated to involve an expenditure of more than a few thousand pounds. The committee will have power to reduce and even to condemn schemes which they consider will militate against the housing policy of the Government. Drastic action is intended, and there is a real prospect of the costly scheme of the Ministry of Labour for the erection of large Central Labour Exchanges going by the board altogether. Certainly, testimony is unanimous from all parts of the country that the Labour Exchanges are unpopular with both employer and worker, and mostly useless. Post Office schemes for postal and telephonic accommodation, in fact, all Government building work except that which is absolutely essential at the moment, is likely to be held up, except buildings necessary to the training of disabled soldiers.

The failure of the appeals for Housing Loans has compelled Dr. Addison to pledge the State to a further increase of subsidies. At a meeting of the Parliamentary Housing Committee on Wednesday, over which he presided, it was announced that the building subsidy was to be increased in the case of those houses completed by December 23, 1920. The

new rates are as follow:—In respect of houses containing not less or more than two living and three or four bedrooms, and comprising not less than 920 ft. superficial of floor area—an increase of £100, making the subsidy £260 per house. In respect of houses containing not less or more than one living room and three bedrooms and comprising not less than 780 ft. superficial of floor area—an increase of £100, making the subsidy £240 per house. In respect of houses containing not less or more than one living room and two bedrooms and comprising not less than 700 ft. superficial of floor area—an increase of £100, making £230 per house. The conditions already laid down as to a reduction of grant where houses are not completed within twelve months of the passing of the Act will apply to these increases. This is another ghastly proof of the Government's reckless expenditure, at a moment when the taxpayer is being bled white, and when industry is being shut down by Control, while at the same time despairingly appealing to Capital for support!

THE CITY CHURCHES.

The very drastic report of the City Churches Commission appointed by the Bishop of London to consider the whole question of the parish churches of the City will, we are sure, not be allowed to take effect as it stands. Whereas the last Commission appointed recommended only the demolition of seven churches, viz., All Hallows, Lombard Street; St. Katherine Coleman; St. Clements, Eastcheap; St. Mary Woolnoth; St. Botolph, Aldgate; St. Mary, Aldermanbury; and St. Margaret Pattens; the present report proposes to remove the first six of these and twelve more, viz., All Hallows, London Wall; St. Dunstan-in-the-East; St. Magnus the Martyr; St. Mary at Hill; St. Michael Cornhill; St. Alban, Wood Street; St. Anne and St. Agnes; St. Botolph, Aldersgate; St. Dunstan-in-the-West; St. Michael Royal; St. Nicholas Cole Abbey, and St. Vedast, Foster Lane; making nineteen in all.

The report is signed by all the ten Commissioners: Lord Phillimore, Bishop G. F. Browne, Archdeacon E. E. Holmes, Lord Hugh Cecil, Sir William Collins, Sir Rowland Blades, Mr. A. F. Buxton, the Hon. H. C. Gibbs, Sir Francis Green, Bt., and Sir Lulham Pound, Bt., with Bishop Browne as Secretary, but the reservations of two of them are really destructive of real unanimity. Sir William Collins is of opinion that at any rate two or three of the churches recommended for demolition are well worthy of preservation, and dissents from the proposal to assign to the Central Board of Finance, being an authority of recent origin and non-statutory character, duties similar to those now discharged by the Ecclesiastical Commissioners and the City Parochial Foundation. Lord Hugh Cecil, in a full note, dissents from such parts of the report as deal with the removal of churches and the sale of their sites. The recommendation to remove the church of St. Mary Woolnoth was only carried by the Chairman's casting vote.

We have little to say about the religious considerations dealt with in the report. It deals with 47 benefices, with a total income of £53,000 a year; but payments in aid of other benefices and spiritual purposes reduce this to £40,000. The resident population is about 13,000, of whom 9,000 are in four parishes. There are full Sunday services in the churches.

On week-days they are open in the middle of the day for private prayer and for services of varied character which have attracted during the war considerable numbers of the day population, stated as over 360,000. All this is to be revolutionised. The City of London is to be divided—fantastically, we think—into four Rectories, to be known as Bishopsgate Quarter, Alders Gate Quarter, Black Friars Gate Quarter, and the Tower Quarter. The four Rectors are to get £1,200 a year each, with a home, and they will each have four assistant clergy, who will get £400 a year each. Ten learned Lecturers will get £500 a year each, with no parochial or pastoral work, so the annual cost of the whole staff will be £16,200 yearly, leaving about £24,000 a year, which is to be spent in more or less useful ways, but always under clerical auspices, and free from any interference of Parliament, together with the large resulting income derivable from the huge sum of £1,695,620, which the sale of the doomed churches, parsonages, and their site values is expected to produce. Is it any wonder that people are saying that, fearing possible disestablishment in the not far distant future, the Commissioners, caring nothing for the churches of the City, are determined to realise all the cash they can and devote it to purposes which, however laudable in themselves, are foreign to the objects for which the City churches were built and endowed? Much more reasonably, many more are saying that if the City clergy were more capable, or if those who appoint them did their duty and presented really hard-working clergy to City livings instead of turning them into refuges for men who have retired from active service not one need be closed.

What Dean Cowie did at St. Laurence Jewry, and Mr. Rodwell, at St. Ethelburga, and Mr. Povah, in quieter but effective fashion at the little church of St. Anne and Agnes, and Mr. Milman, at St. Augustine and St. Faith, in the early sixties of the last century, and which was continued later on with still greater success at St. Nicholas Cole Abbey, might well be done to-day in every City church. Prebendary Carlile, who at the age of 73, "does not want to be superannuated," while he fills his church and uses his rectory house to such good purpose. It is ridiculous, in the face of facts, to pretend that the original purpose of the churches has been outgrown. As Canon Partridge has pointed out, those who work in the City are drawn from Greater London, Kent, Surrey, Berkshire, Hertfordshire, Essex, and Middlesex, that is to say, from not only the Diocese of London, but Canterbury, Rochester, Southwark, Winchester, St. Albans, Chelmsford, and Oxford, possibly even from Chichester. From such, as is always the case when really good work is wanted, the active co-operation of the busy men and women in the City could be, in every parish, if properly sought for, organised.

But, apart from the religious aspect of the question, we are astonished that among the names of the Commissioners not one appears of an architect, or of any expert in architectural knowledge. Had there been, we should have no such idiotic idea put forward as the proposal to leave all the churches built before the Great Fire intact, to spare as many as possible of those built by Wren and his contemporaries, and to demolish ruthlessly all erected since. Really, in the second category, we wonder St. Paul's was not tabled for destruction, seeing that the appeals for its repair and preservation are perennial, and that the site would add another million or two to the big

sum the Commissions dangle so alluringly before the iconoclastic economists. Professor Beresford has well said, interviewed by a contemporary,

"The City churches sanctify the City. They give to business London an atmosphere that you will find hardly elsewhere. In my view the proposals are illogical and bad, and cannot therefore be defended. The idea seems to be to leave everything before Wren; to deal gently, as may be, with the Wren period; and to be ruthless to the post-Wren churches. I would ask what right has the Church of England to consume its capital? It is a form of clerical cannibalism that can be extended too easily, once the principle is admitted. It is absurd to talk about leaving the towers standing of some of the churches. I strongly protest against the suggested vandalism, and shall do all in my power to defeat the scheme."

So shall we all. If this extraordinary proposal is persisted in, and all these churches are to come down, it will rob the City of a great part of its history, and what remains of its ancient beauty will disappear altogether. All Hallows, Lombard Street, is the finest church in the City, fitted up by Grinling Gibbons. St. Alban's, Wood Street, another doomed church, is full of a most interesting example of Inigo Jones's work, where he attempted to bring in the Gothic style. This church was redecorated about twelve years ago, only to be wasted. To St. Mary's, Aldermanbury, over £3,000 has already been contributed by those employed in the offices and warehouses in the neighbourhood as a war memorial to the restoration of the church and also for the erection of a war memorial chapel. The church of St. Magnus, London Bridge, was recently repaired at the cost of nearly £1,000 to remove traces of an air raid. We could, of course, add almost indefinitely to the list of sums given for, and wisely spent during the past fifty years on, the preservation and adaptation to modern needs of the City churches, and we assure all concerned that this ill-timed waste will not check the generous munificence of the citizens, who will still continue their gifts long after the vandalism we are threatened with is forgotten. If any doubt this let them be assured their gifts will not be wasted. Any City church really not wanted in the future will be utilised profitably, just as it was recently suggested to use St. Vedast's, Foster Lane, as a lecture hall, which might very well be done without interfering with its architectural amenities. Other perfectly legitimate uses have been proposed, and more will be, all alike compatible with commonsense, economy, and the perpetuation of the thousand and one memorials of civic history, of the great dead who helped to make it, and won world-wide fame and there and elsewhere, in literature and the arts, in the defence of Liberty, and that of ordered Freedom against lawless anarchy, which are enshrined in the temples of our fathers which it is sought to defile and destroy, or, still more ridiculously, to remove and rebuild, stone by stone, elsewhere!

COMPETITIONS.

HAWICK WAR MEMORIAL COMPETITION.—Members of the Society of Architects are requested not to take any part in the above-named competition without first ascertaining from the Society that the conditions have been approved by the Council.

THE IDEAL PUBLIC HOUSE.—Messrs. Samuel Allsopp and Sons, Ltd., announce that they are prepared to receive designs for the Ideal Public House, and offer premiums of £200, £175, and £125 for the designs placed first, second, and third in the competition. Mr. W. Curtis Green, F.R.I.B.A., has consented to act as assessor, and the author of the design placed first will be engaged as architect for an Ideal Public House at the R.I.B.A. scale of remuneration. Designs must be sent in before June 30, and conditions of the competition may be obtained from Samuel Allsopp and Sons, Ltd., Burton-on-Trent.

THE ARCHITECTURAL ASSOCIATION.

ARCHITECTURAL IMPRESSIONS OF AMERICA.

On Monday an ordinary general meeting of the Architectural Association was held at 34 and 35, Bedford Square, Mr. H. M. Fletcher presiding. Among the other business done, the following new members were elected:—Messrs. James G. Warwick, H. E. Rolley, L. B. Budden, O. Hammersley, D. G. Marsh, Martin Smith, F. J. Barnish, S. E. Keightley-Gomme, H. J. Mark, T. S. Tait, F. Broadhurst-Craig, F. C. C. Dale, F. Barber, W. E. Haslock, R. S. Dixon, W. T. Plumble, F. G. Chapman, L. de Soissons, and A. V. Farrier. The Council's nominations for President, vice-presidents, Council and other officers of the Society were also laid before the members for election on May 31. A majority of the nominees are already office-holders of the Society.

Subsequently Mr. Robert Atkinson, F.R.I.B.A., delivered an address, illustrated by lantern slides and entitled "Architectural Impressions of America." He said that the first impression he had gained in his three months' tour in America had been more social than architectural. He had been impressed by the multitude of types in the streets. There was a superficial resemblance, because all followed the same fashion in hats and clothes, but beneath that surface there was every nationality under the sun.

Afterwards came the architectural impressions. The New York city buildings were sometimes made the occasion for a jest that they were so tall that it was necessary to wind them down to let the moon go by. Apparently the winding apparatus had gone wrong, and the buildings had stopped at all sorts of heights. The New York skyscrapers provided the accommodation they had been erected to give, but they were not artistically a success. Very few of them were homogeneous. They were not impressive as a cathedral was. Their stories were very small: the minimum height required for an office. They were extremely logical in that they were treated as a succession of stories, but any one of them might have half a dozen stories cut off without injuring the design at all. There were a few that were architecturally successful; these had generally three or four stories near the street in the form of a Classical temple, then a long cliff of plain walling, and then another temple on the roof. Skyscrapers were more successful if there was a visible roof. One of the best had the Campanile of San Spirito repeated four times and an erection like the tower in Seville in the middle. Much the best of all was the Woolworth building; that was the only one of which it could be said that the design was homogeneous—you could not take away the roof or basement and leave the building complete. It was more happily designed, and its multitude of windows were less obtrusive than those of other skyscrapers. It was defective in that it had Gothic detail, and, its success having been recognised, there was a danger of a second Gothic Revival. The newer buildings in New York were tinged with this neo-Gothic style, which was not suitable to them really.

Mr. Atkinson showed slides illustrating these points, and continued that he had an immense admiration for American architecture: it was far ahead of anything we had in England. New York had a shopping district in which were grouped all the great stores; these shopping buildings were very fine and seldom more than twelve stories high. The great thing about the shop fronts was their beautiful detail; we should be very fortunate to have one such building in London, but Fifth Avenue was filled from end to end with fine shop fronts. The public buildings of American cities were magnificent, and so were the hotels.

The fault he found with American architecture was that the decoration was nearly always neo-something, whereas it was better for a nation like America to produce some new design of their own based on modern requirements. American architecture was bookish to a degree; he thought this was

largely the result of their method of training. Their schools of architecture were all very efficient, but the students seemed to stop short of the stage of creation. They came out into the world and produced copy-book designs; their plans and construction were eminently modern in every sense, but their clothing of that design was nearly always academic. In Chicago, however, some years ago a new school had been begun, of which Sullivan was the leading spirit, and in the cities of the Middle West his disciples were still working in that style. Its chief characteristic was that it was not neo-something. A building of this sort might be ugly, but it would be an expression of something as the architect understood it in a new spirit, and that spirit was becoming more adapted to its requirements.

The slides with which Mr. Atkinson illustrated this part of his lecture included one of a block of small apartment houses in San Francisco. He pointed out that the modelling was fresh and the handling new, yet the crudeness of the earlier attempts had gone, and the style was becoming characteristic and beautiful in itself.

Architects in America, he said, were in the van of every modern movement; the way in which the large cities provided for the future could be traced to their influence, and the town-planning achievements were remarkable. A noticeable feature of America was the inability of the people to amuse themselves; we had the same thing in this country, but not to the same degree. There was practically no country life for the town workers in America, and they had developed a habit of artificial amusement which was a danger in every direction. The authorities were aware of the fact, and were providing facilities for outdoor amusement on a larger scale and in a finer way than was the case here. Every great city had "neighbourhood parks" connected with each other by wide boulevards; in these parks were open-air swimming baths, libraries, tea pavilions, and other outdoor buildings, and architectural ornaments which were often beautiful. Most of the work was in concrete.

Of American garden suburbs, Mr. Atkinson said they were laid out much in the style of English ones. American architects studied our domestic architecture closely, and admired it immensely, though they thought little of our other architecture. The chief differences he had noticed were the absence of fences, the way in which the streets were parked, fine lamps and other details. Buildings for the common use, such as tramway shelters or drinking fountains, were really well done.

Another part of Mr. Atkinson's lecture dealt with what he had seen in Southern California, where there is a style of architecture whose material is concrete, but the work is in imitation of the old Spanish-Mexican and mission buildings. This style of building was, he said, well suited to the landscape, and lent itself to imitation in concrete better than any other.

Among minor matters mentioned were the use of silica as an ornamental finish for concrete work. The silica is sprinkled on the mould before the concrete is filled in; it adheres to the concrete and, when polished, gives a surface like white granite. Another such matter was the use of sgraffito, an ancient material, for surface decoration to concrete construction.

Mr. Atkinson concluded with a tribute to the hospitality of Americans. He had been received everywhere, he said, with open arms. It was a very common thing for an architect to give up work for the day and show Mr. Atkinson all the local lions, going to considerable expense in fares, lunches and the like. The Architectural Association might show something of the same spirit to American visitors here; members might be detailed who would take the visitor about, getting access to buildings which might not otherwise be accessible.

A discussion followed, dealing with various points raised in the lecture, and a resolution was carried that the Architectural Association should show hospitality to American

architects when they came over this year and next. This proposal the Chairman said he would report to the President and Council for them to carry it further.

RENT PROBLEMS.*

By SYDNEY A. SMITH, F.S.I.

In this Paper what may be termed "the housing aspect" is primarily dealt with. The general propositions in regard to that type of property affect all others, although the considerations affecting the groups are not entirely identical.

To appreciate the complicated problems connected with rent it is necessary to recall exactly what rent is. A Paper read to this Institution just over six years ago devoted much space to this subject, and those members who would wish to pursue it further might with advantage refer to the "Transactions" recording the Paper and the discussion thereon. For the immediate purpose reference is made to that portion of the Paper which may be helpful.

In the first instance rent may be described as being the profit of possession or the measure of the gratification flowing from possession. Rent, it is unnecessary here to explain, really consists of two parts—one the payment made in respect of the occupation of the site, the other representing interest on the capital expended in the erection of a building which enables the occupier more fully to enjoy the benefits of the possession. That portion of the payment made by the tenant in respect of the buildings and improvements depends, in the first instance, upon the cost of production and the rate of interest required by those engaged in the business of building, the ordinary laws relating to production applying.

The result is that if houses are to be erected the rent obtainable must be a "remunerative" one having regard to the cost of production, which of course will include the rate of interest required from that kind of investment. Once the buildings are erected, however, a rent may have little regard to cost of production as the standard of payment which tenants would be prepared to give for possession would be settled on altogether different considerations, varying according to whether the supply is in excess of the demand or whether the demand is greater than the supply. This rent, so fixed, would be an "economic" rent, and although it is true that in many instances the economic rent must also be the remunerative rent, it is not true that the remunerative rent would of necessity be the economic rent. We shall see a little later some examples of the truth of this general proposition.

In a large number of cases, perhaps by far the largest in point of view of number, the payments by the tenants include rates in respect of public services and repairs to keep the premises in a state fit for occupation, and the relationship between the parties to a tenancy may be seriously disturbed when violent fluctuations in one of these items occur. In a free market these fluctuations are comparatively easily adjusted owing to the fact that the tenancies, being of limited duration, are capable of being determined with a view to fresh ones being entered into. One of the difficulties at the moment is that legislative interference has for the time being prevented, except to a small extent, the readjustment of the relationship of the parties consequent upon the fluctuations which have recently taken place.

Reference has been made to the influence of the operation of the law of supply and demand on rents and the production of houses. We are all well acquainted with the phenomenon of the cycles of building activity and building depression. These periods recur in most communities at fairly regular intervals. They are perhaps most clearly evidenced in the case of London, and are better displayed there by reason of the available records which have been compiled over a considerable period of years showing

* From a Paper for discussion at the ordinary general meeting of the Surveyors' Institution on Monday, 10th May, 1920.

† "Value, as applied to Real Estate," by Frank W. Hunt: Vol. XLVI., p. 231.

the progress of house building of a certain class and its relation to the empties.

Looking back, it seems that the cycles of building activity show a rising curve from the early seventies to the early eighties; falling in the early years of the next decade, and rising again until it reached its culmination point during the first few years of the present century. There was therefore nothing particularly alarming when a decline in house building, which had been obvious for some years, began in 1903 to become serious, as during the previous cycle there had been a somewhat similar decline in 1886, which was followed by eight or nine lean years. The fall, however, continued, and soon after the outbreak of war building substantially ceased except in those cases where the Government undertook, in connection with munitions establishments, the provision of accommodation either of a permanent or of a temporary character.

The cessation of building has naturally eaten up the whole of the margin which every community requires for its ordinary corporate development. A fair percentage for such a margin has never yet been determined, but it is probably in the neighbourhood of 2 per cent. At times the actual margin is as high as 5 per cent.; and a series of investigations made with regard to London show that in the year 1910-11 the empty property of this class was in the neighbourhood of that figure. Special inquiries in certain typical districts covering a substantial area, in a series of years, showed how rapidly this percentage of empty property was reduced, and in 1914 it was, in those districts, about $1\frac{1}{4}$ per cent. only.

In 1918 general inquiries and statistics of large estates all pointed in one direction—that there was then no vacant accommodation available. The same position is to be found in all parts of the country, even in rural districts, where circumstances are somewhat different from those of the urban areas.

With the great diminution in building for some years before the war and its practical cessation since 1914, the law of supply and demand would no doubt have operated to cause rents to rise, but this has largely been prevented by the provisions of the Increase of Rent and Mortgage Interest (War Restrictions) Act, 1915, and the succeeding Acts of a similar character. The rents at present charged under these Acts are consequently pre-war rents, and are practically the same as were charged as far back as 1900. Up to that year, or a few years later, rents had been increasing, but from that time until 1912 they showed a tendency to fall, and according to a Board of Trade Report they declined between 1905 and 1912 in the London area, the decline amounting to a decrease of about 4 per cent. This was due to the fact that the amount of housing accommodation provided was much in excess of the growth of population. For while during the period 1901-11 there was a net decrease of 14,582 in the population of the county of London, there was during the same period a net increase of over 100,000 rooms in new working-class accommodation alone.

The first Rent Restriction Act received the Royal Assent on December 23, 1915, and continues until Lady Day, 1921.

As to any further period of the restriction it is almost impossible to suggest a final term at the present time. In the Regulations of the Ministry of Health, as to the fixing of rents of houses for the working classes provided under State assistance schemes, 1927 is fixed as the end of the provisional period, after which it is anticipated that normal post-war conditions will obtain, and the period of remunerative rents for new houses after that date will be reached. It is, however, impossible to suggest whether such an anticipation will be realised. Any date now fixed for the continuance of the rent restrictions must be provisional.

The 1915 Act applied to houses the rent or rateable value of which in Greater London, i.e., the Metropolitan and City Police districts, did not exceed £35 (£26 elsewhere in England and Wales). This limit was extended by the 1919 Act to houses in Greater London of which neither the rent nor the

rateable value exceeds £70 per annum (elsewhere in England and Wales, £52).

Had there been freedom of contract and no rent restriction Act passed, rents would undoubtedly have risen enormously. Such increase would no doubt have had the result of compelling many tenants to reduce the extent of the accommodation they occupied. As to the poorer of the working classes this would have almost been impracticable, such tenants possessing little margin for adjustment, which is illustrated by referring to the conditions of London where 758,786 persons are living more than two in a room.

Shortly put, the rent restriction under the Acts does not apply to a tenant but to the house, and is a restriction against the increase of a rent, so that it matters not whether there is a change of tenancy or whether a tenant is willing to pay an enhanced rent. The 1915 Act made it illegal to receive a rent in excess of the standard rent of August 3, 1914. In the case of inclusive rents there is a provision which enables a landlord to recover increases in rates after giving proper notice to a tenant, also the standard rent may be increased by 10 per cent. from a date six months after the termination of the war. As this date has yet to be fixed by an Order in Council, it is obvious that no such increase can be obtained until at the earliest after a date approaching Christmas next.

By the 1919 Act the rents of houses between £35 and £70 in the London area (£26 and £52 elsewhere in England and Wales) may already be increased 10 per cent.

Some very interesting questions have arisen under these Acts, and one of the most common errors into which those not well acquainted with them have fallen is the suggestion that rents, irrespective of their tenancies, can be increased by 10 per cent. now. The currency of an agreement, for instance, would be an effective bar to any increase in rent, and it is only possible to do this when the existing tenancy can be determined with a view to making a new one.

Unless the statute be extended, at Lady Day, 1921, all protection runs off, and tenants will then be more or less at the mercy of landlords in those cases where tenancies are short ones. This is a condition of affairs which will happen at any time at the end of a period of restriction, unless, meanwhile, the provision of new houses has so far re-established a margin that tenants will have little difficulty in finding other accommodation when displaced from their existing houses. Already landlords have been, and are still, serving notices determining tenancies, the idea apparently being that, from the date of the determination of the tenancy until Lady Day, 1921, the tenant will have a statutory tenancy which must of necessity cease the moment the statute ceases to operate. If this becomes general, a large proportion of tenants will have ejectment orders made against them, and landlords will be in a position to demand whatever rent they like to ask. It appears, therefore, that there must be some continuing protection against ejectment whatever may be the future decision as to increase of rents. In the absence of this, the movement for the establishment of rent courts would receive a substantial impetus, and, as will be seen later, these have had to be established in dealing with a similar problem in Germany.

The effect of the restriction Acts may be considered from several points of view. Take that of the owner first. The owner has been singled out amongst all those possessing commodities or services which others require; he alone is restrained in the payments he may receive. Doubtless there were very good reasons of State for the action taken early in the war, but as the owners of this class of property have also been subject to rising prices and high living costs in every other direction, there has, perhaps not unnaturally, been some feeling of hardship at this discrimination. If matters had rested there, this feeling might in time have been dissipated, but unfortunately the restriction on increase of income receivable has been accompanied by a great increase in the cost of maintenance and management. For example, the cost of repairs has, on a most moderate computation, increased by at least 200 per cent., while supervision, where this

is required, has at least doubled in its cost. These items cannot be passed on to the tenants while the restriction Acts remain in force in their present form. Increase in rates over 1914 can, from time to time, be recovered from the tenants, but the great rise in Schedule A tax, based as it is on an assessment which in many cases bears no relationship to the net income actually received, frequently results in the almost entire disappearance of a net income. More than this happens. The owner was content with a reasonable percentage on his money which bore some relationship to the rate of interest of the premier security. Since 1914 the yield of Government securities has approximately doubled, but the restriction Acts, even if the other losses described above were permitted to be recovered, would not allow of the increased rate of remuneration now obtainable for capital. Limitation of rent has been a factor in influencing owners to sell whenever houses become vacant, by which means a high price is obtainable, the owner's alternative being a low income from rent accompanied, very often, by a heavy outlay for repairs on reletting. Enough has perhaps been said to show the financial strain which has been placed upon the owner. But what about the tenants? Most of these, it may safely be said, in addition to obtaining improved conditions as to hours of employment, have at least doubled their rates of pay. It is probable that many workers possess incomes so improved that they are occupying accommodation beyond their needs. Some trades, including a large number of those who, before the war, were among the lowest paid classes have done much better than doubling their wages.

In the recent Court of Inquiry as to the dockers' wages it appeared that these, before the war, were about 4s. 6d. a day, and it is now proposed to fix the national minimum at 16s. per diem.

The tenant, however, has been required to accept no more than the burden of the additional rates, these being assumed to be in the main for the benefit of the occupier. The additional burden per week over 1914 has, up to Christmas, 1919, represented but a small amount.

That some control will be needed until the conditions following the war have been stabilised is doubtless true, and the Government have received an interim report from the Committee presided over by Lord Salisbury recommending an extension of the restriction Acts for a further period, which recommendation has been adopted.

Members of the Institution are familiar with the Government's housing policy, in the execution of which local authorities are being urged to erect a very large number of houses—some 500,000 at least—during the next few years. The Government assist these schemes by undertaking to bear the annual loss in excess of the produce of a penny rate, and it is obvious that the loss so assumed by the State must depend, *inter alia*, upon the rents charged. To minimise the amount of this burden on the State, the Government, naturally, are taking steps to see that the highest possible rents are being charged for the municipal houses, and local authorities are guided in this by "The Local Authorities (Assisted Housing Schemes) Regulations, 1919, Schedule B."

It is gleaned that the view of the Government is that the normal post-war cost of erection may be assumed to be stabilised about 1927 at about two-thirds of the present abnormal cost of building, which apparently assumes an increase in cost of building over pre-war standards of from 66.2-3 to 100 per cent. The enhanced cost of building is practically due to increased wages, which enter into the price of all materials as well as the actual operation of building. The price of material is further hardened by reason of the demand exceeding the supply and many products being controlled by trusts.

Additional rent due to extra building cost is palatable to no one, and in particular is resented by the working classes themselves, who fail to realise that the extra charge is brought about primarily by extra wages paid to their fellow-workers.

If wages could be regarded as stable one difficult problem would be solved, but at present there seems little certainty that the demands of labour are satisfied either as regards wages or hours, while it is notorious that output does not compare with pre-war results. It is clear that the Government are not afraid of a greatly increased rent level. Dr. Addison, the Minister of Health, in the House of Commons on February 17, 1920, is reported to have said:—

"The next important question that was raised was the future of the Rent Restriction Act, and the general policy of the Ministry with regard to rents. I was asked to give some figures as to the actual rents we had asked authorities to charge. . . . If it costs £800 to build a house and you could have built the same type of house for £250 previously, you cannot let it for as low a rent as the house which cost £250. That is the basic fact of the whole thing. . . . I am not going to subsidise wages and housing at the same time. The proper policy is, allowing for the excess of the cost due to the war, to secure as soon as you can on the remainder an economic rent. A man's wages should be enough to enable him to pay a proper rent. I am not going to be a party to subsidising low rents. . . .

"Dealing with the rents of the houses, the idea is to take off one-third as the excess of war costs. What we aim at is that in 1927 there shall be an economic rent on the remainder. That means, in a number of cases, that the economic rent of the house should not be less at the end of that time than nearly £1 per week. That is an enormous increase in a working-class rent. It is a grave matter, but we have to face realities, and I am not going to be afraid to face them. Take the case of Birkenhead. They came to me and asked: 'What shall we charge?' Having considered the type of the houses, and so on, I said: 'For that type of house I want you to charge 10s.' For another type I think it was 12s. 6d. In the case mentioned by the hon member . . . I asked them to charge 10s. at first. In the case of Birkenhead I said that in 1921 we should look to that rent to be increased by a given amount—I think it was 1s. 6d. a week. It means that in many areas that the rents for these houses are higher at the present time than for houses of a similar class in that district. I admit it is higher. It has got to be higher. . . . They are better houses. . . . they have better gardens. They are not huddled in rows close together; they are set up ten or twelve to the acre. They are better houses to live in and they are worth it. Putting that on one side, they cost two and a half times as much to build—three times as much in some cases—and we have to consider that. In Wolverhampton the beginning rents of houses containing a living room, parlour, and two bedrooms, are 10s. a week; Birmingham 15s., Derby 12s., Birkenhead 10s., Ruislip 12s. 6d., Bilsdon 15s., and so on. In nearly all these cases we have fixed a higher rent than houses with the same amount of accommodation would have in the district. Almost without exception the authorities have gone away quite naturally promising themselves and sometimes saying to me: 'Well, we shall put the blame on you.' They do. I do not mind. Let us face up to it. Unless we recognise that we have to introduce sound economic principles into this business no one is going to build a house in the future. You will destroy house building."

What would be the effect of the rents to be charged? An economic rent might go far in encouraging building, but it is obvious that, for the classes for whom accommodation is urgent, it would not be practicable to charge, at once, the rents required to obtain a remunerative rent or even two-thirds the present cost. To do so would mean that approximately a rent of 30s. a week would be charged for a five-roomed cottage and 24s. a week for a four-roomed cottage, which would work out at an average of 6s. a week per room, as compared with approximately 2s. 6d. a room for existing cottages in London. Whatever may be the wishes of the Minister of Health, the rents to be charged for the new buildings must naturally be governed by

the conditions existing from time to time, and any rules now laid down by the Ministry must be either interpreted in the light of those conditions or revised to suit the altered conditions that may be found to obtain.

If it were possible, therefore, to establish a rent-level as high as that suggested by the Minister of Health, the result would undoubtedly be a levelling up of rents generally. The increase in rents from the outlying districts to the centre is accompanied by an increase in the density of occupation of the dwellings, the occupants thereby minimising the effect of the high rents by reducing the amount of their accommodation.

Another most important factor governing the level of rents is the amount which the tenants can afford to pay, or would be prepared to pay, for the new houses.

A Board of Trade Report issued in 1903 gave 15 budgets of working-class families in London collected from various sources, which show an average weekly income of 25s. 2d., and an average rent 5s.—that is a proportion of nearly 20 per cent.

The proportion in London has always been higher than other parts of Great Britain, owing mainly to London's higher rent standard.

No doubt in the solution of the problem many factors will operate; houses will be built more cheaply either by new designs or inventions, or by reducing the present quality; tenants will be content with less accommodation than at present; and wages, or, at any rate, the capacity to pay of the tenants, may be increased.

As regards the question of fixing the rents of the new dwellings, it seems to follow that, unless there are to be two standards of rents, these must be fixed on the basis of the rents ruling in the neighbourhood, with an addition for the quality and amenities of the accommodation which may be put at from 10 to 25 per cent.

The problem before us is not only in regard to the rents of the new dwellings, but equally the rents of the old dwellings. If rents of the dwellings erected in future are to be twice what they would have been before the war, the rents of the dwellings erected in the pre-war years, if not restricted by legislation, would rise in something like the same proportion. For many years the post-war dwellings will necessarily form only a small proportion of the pre-war dwellings.*

PROFESSIONAL AND TRADE SOCIETIES.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—At a special general meeting, summoned by the Council under By-law 65, held on Monday last at 8 p.m., the following resolution was moved from the chair:—"That in order to provide funds to meet the increase in expenditure due to the general advance in prices, an addition of one guinea be made to all entrance fees and subscriptions of members and contributions of Licentiates; and that the necessary steps be taken to obtain the sanction of the Privy Council to such revision of By-law 17 as is required to give effect to this resolution." Two members objected, but eventually, after a short discussion, the resolution was carried unanimously.

At a Consistory Court held at Norwich last Saturday, the Chancellor of the Diocese, giving his considered judgment on a case from the parish of Ingham involving the question of the legality of erecting memorials in churches which commemorated not only those who had fallen in the war, but men who served and came back safely, said that the law was that you might permanently commemorate inside the church people who had died, but not those who were still alive. He thought he might grant faculties allowing any document of parchment or other material containing the names of such men to be hung in a church in a movable frame.

* Readers interested should not fail to procure Part XI, vol. LII of the "Transactions" of the Surveyors' Institution, which contains a full report of this most valuable paper, which we regret not to be able to give more space to, together with an appendix on the Housing Problem in Germany.—Ed.

FEWER DESIGN UNITS FOR REINFORCED CONCRETE BUILDINGS.

The standardising of parts is being used in steel mill and factory structures, and it is evident that it can, to a certain extent, be applied also to reinforced concrete.

With this in view, the special committee on Standardisation of Units of Design of the American Concrete Institute, A. B. MacMillan, chairman, made a study of reducing the number of units of the same class, thus to speed up construction. In a progress report to the Institute at the recent convention in Chicago, the committee presented some interesting information to show the causes for excessive costs under which present construction is going on, and how standardisation will reduce the cost of building. The salient features in the report are abstracted here.

STANDARDISATION OF STEEL UNITS.

In the earlier days of structural steel each rolling mill had its own rolls, which varied in small details from those of every other mill, and which covered an enormous gamut of sizes. Designing engineers, in striving for economy, as they thought, called for sizes varying by a few pounds weight for each slight variation of load to be carried, with the result:—

1. That the engineering cost was more expensive than necessary.
2. That tonnage output of the rolling mill was reduced, owing to the innumerable changes in rolls required.
3. The work of the fabricating shop, together with the opportunity for error, was greatly increased owing to the possibility of mistaking one section for another which differed only in minor degree.

It was, of course, difficult to get material from several different mills and use it interchangeably, because of the lack of standardisation. It soon became apparent that the multiplicity of shapes and weights put a tax on the use of structural steel that was unnecessary and undesirable.

As a result, the decision to roll only certain shapes and weights was reached, and designers were compelled to adopt these shapes and weights to their use. Needless to say, a good deal of agitation and misgiving was occasioned, but to-day we know that the change has been justified, that the smaller number of sections to be obtained are nevertheless sufficient for any case that may arise, and that economy has gone hand in hand with change.

The standardisation of structural steel is but one example. This has been extended to steel sash and other items used in the construction of buildings.

LACK OF STANDARD UNITS.

The lack of standardisation, with its attendant brothers, is clearly shown in the products of the various brickyards, hardly any two of which produce brick of a size and colour so nearly alike as to enable them to be used interchangeably with the bricks from another yard. In a time like the present, where there is a decided shortage of brick, this condition is an unmitigated hardship.

To-day we are facing an unprecedented demand for new buildings on the one hand and a shortage of materials and labour, a condition of congestion and embargoes on the railroads, and an unrest in the labour field that is reflected in a lessened output per man for the hours worked. It is, perhaps, due to the shorter hours that there seems also to be a falling off in efficiency over that which obtained before 1916. This can be accounted for, at least partially, if it is remembered that even before the war the workmen did not hit their full stride the moment the whistle blew, neither did they work at full speed to the moment of closing at noon or night.

INEFFICIENCY OF LABOUR.

The condition of an early finish and a slow start obtains to-day, but owing to the shorter day now prevalent it means an actual decrease in the total output compared with the output of an equal number of hours for the longer day, although in each case, comparing hour for hour, the men may be working at exactly the same rate.

The reduction of output is greatly aggravated by the actual shortage of skilled and

unskilled labour. This deficiency is estimated by the brick masons' union to be not less than ten thousand men for their trade alone. Such a lack of workmen, in the face of a tremendous demand for workmen, both by builders and manufacturers, has a tendency to increase the drift from job to job, with the resulting effect that new men must constantly be hired and educated for new duties. It is, or should be, quite apparent that in a limited period of time it is much harder to teach a man how to perform a number of different tasks, and obtain satisfactory results each time, than it would be to teach one thing, and by constant repetition to reach a high standard of efficiency.

It is quite possible to take men of average intelligence and make them good workmen at any one job in a very short time, providing they are kept at one job without variation.

REDUCTION OF BAR SIZES.

At the present time the bar mills are being forced to reduce the number of sizes and kinds of bars rolled. This is largely an economic condition. The men in the rolling mills are paid on a tonnage basis; the overhead of the mill, too, is charged against the tonnage output. The mills, recognising these facts, are to-day rolling approximately two-thirds of their output in sizes above the $\frac{3}{8}$ in. base size and one-third in sizes smaller than base.

To take a typical case, one ton of $\frac{3}{8}$ in. round bars would equal 5,320 lineal feet, whereas it would equal but 1,350 ft. of $\frac{1}{2}$ in. round bars. Unquestionably, the cost of labour and overhead on the larger size must be much less per ton than that of the smaller.

It is very probable that for the immediate future at least the intermediate 1-16 in. sizes will be abandoned, and designers of concrete structures will be forced to content themselves with sizes that advance by even eighths.

SPECIAL ORDERS INCREASE COST.

Citing again the steel sash shops as an example of the tendency towards standardisation, just so long as the regular stock sash with flat heads and horizontal pivoted ventilators are ordered, a reasonable time of delivery may be obtained. If, however, to satisfy a whim of the owner or engineer, vertically pivoted ventilators are called for, the whole operation of the shop is thrown out of gear.

The workmen in the sash mills are paid a regular rate plus a bonus for output. Just as long as the work is standard and regular the men earn a bonus worth while. In fact, however, something special, and the routine of the factory stops; the men do not make their bonus, with the result of a prompt disintegration of the morale and a great falling off of efficiency.

Examples may be multiplied, but this will suffice to indicate the desirability of standardisation, not only in rolling mills and factories, but in the closely allied industry, the manufacture of buildings.

MAY BECOME CHEAPER TO USE MORE MATERIALS AND LESS LABOUR.

Constant thought and attention must be given to the relative cost of labour and materials.

In 1916, on an average job, a division of the money spent in producing the structure would indicate that labour cost about 30 per cent. and materials purchased about 70 per cent. of the total. To-day the division would be approximately 40 per cent. for labour and 60 per cent. for materials, and it is predicted that in the near future, owing to the rising price of labour, this division may be more nearly fifty-fifty. As the labour cost increases it becomes self-evident that more and more material can be used, if thereby labour can be reduced.

To apply this line of reasoning directly to the individual parts of a concrete building is not simple. It is very difficult to make it clearly obvious that where a number of beams in a building are of one size, although the loading may vary sufficiently to allow decreasing the depth or the width in some instances, nevertheless such change, while it would undoubtedly save material, would probably make the saving at the expense of a considerable extra cost for labour and supervision.

It is proposed by the committee to submit at the next meeting of the American Concrete Institute actual design and estimating data illustrating the possibilities of a greater degree of unification, particularly relative to footings, columns and beams.

HOW SUPPOSED ECONOMIES INCREASE COSTS.

In the meantime, a few specific instances of details that apparently economise but actually add to cost will be indicated.

1.—Blueprints for a building recently submitted showed a total of 54 footings. These footings were in the form of truncated pyramids with a square or rectangular base. Slight variations in the size and shape of the base and of the top on which the column rested resulted in 19 separate types of footings. Of this number 14 occurred once, 2 occurred twice, 1 three times, 1 occurred five times, 1 twelve, and 1 sixteen times. The footings as detailed doubtless saved some concrete over that required by simple steps, but the saving was made at the cost of some very fussy and expensive form work.

2.—A second example is the case of a building with different story heights. While this may sometimes be necessary to tie into existing buildings, variations of this sort require piecing out or cutting off all supporting shores under the floor forms, as well as the column forms themselves, and is an added expense.

On another building of flat slab design, with circular interior columns, the column caps were called for 6 ft. 6 in. in diameter. The standard head made by the metal column mould companies is 6 ft. in diameter. This head was, therefore, a special piece of equipment, and cost considerably more than the standard would. If the head had been made the standard 6 ft. diameter, and $\frac{1}{2}$ in. extra concrete added to the depth of the plinth, the shearing value of the concrete would have been the same and the total volume of concrete used would have been no greater, and a saving would have been made in cost.

To touch on wall and interior columns in general, it is undoubtedly economical to keep the column size unchanged through at least two stories, varying the column mix and, if necessary, having some excess strength in the upper lift. This is particularly true where the columns are square or rectangular and wooden forms are used.

EXPENSIVE EXTERIOR COLUMN DESIGN.

Still another point in connection with wall columns in flat slab buildings may be illustrated. In the earlier days of flat slab construction the use of drop panels was largely confined to the interior columns, the wall beam was built usually entirely above the slab, and a simple haunch on the inside face of the wall column below the slab sufficed for all but extraordinary demands.

To-day, designs frequently call for a plinth at the wall column as well as at the interior. As this plinth extends either side of the column, it necessitates a small drop beam, the depth of the plinth being carried across the head of the window, and in order to obtain sufficient strength it is also necessary to carry the beam above the slab. Probably it will not be disputed that this is more expensive than a simple beam above the slab, and usually performs no function which could not have been adequately arranged in a simpler way.

Another condition that occasionally arises is that where it is specified, gravel can be used for aggregate in the floors, beams, etc., but that broken stone must be used for aggregate in the columns. In many parts of the country gravel is the only easily available supply, or it can be purchased more economically than broken stone. Under these conditions gravel would naturally be desirable, but its use would mean getting aggregate from different stock piles and routing each batch of concrete on the floor so that no gravel concrete was placed in a column.

The roof of a building also requires careful attention. It is desirable that the regular floor forms be used with as little variation as possible. The story height should be the same as that of the floors below. The ceiling should remain flat, and it is a question if it is necessary to pitch the upper surface, provided a good job is made of the roofing.

SUMMARY.

Footings.—Where the sides of footings are sloped the number of forms to be made should be reduced to a minimum by utilising the same sloped form for footings even when the areas of the base courses below the sloped portion are different sizes.

In many cases a stepped-up footing without steel will prove more economical than reinforced concrete footings. Care should be taken in the use of plain concrete not to exceed a reasonable unit in tension.

Columns.—In order to effect economies in the form work it will often be found desirable to maintain the same cross-section of column through several stories. In the case of interior columns where metal forms are used it is important that that portion of the metal form which adjoins the floor construction shall be uniform in the several stories to avoid the changing of the floor forms. When metal forms are used for interior columns, the reduction in the size of column, if made at all, should be made in every other story. The vertical steel reinforcement should be made up of as large bars as are consistent to good practice in order that the handling expense may be reduced to a minimum.

Beams and Girders.—In determining the depth of beams and girders of floors, a careful study should be made to determine the depth which will give the minimum total cost for the reinforcing steel and concrete combined. This should be considered, although very often the minimum depth to be used for a certain span or the criterion of shear will govern the depth actually determined upon.

In general, the forms for roof construction should be the same as those for the floors, in order to avoid the expense of remaking the forms. It is very seldom possible to remake the forms and save enough concrete to make it worth while. Every effort should be made to so plan the construction that forms can be used from floor to floor.

Story Heights.—From the standpoint of economy it is desirable that the story heights be such that it will not be necessary to lengthen out the column forms to provide for the upper stories.

Steel Reinforcement.—In order to avoid excess of labour costs in the field, it is desirable to reduce the number of lengths and sizes of reinforcing bars to a minimum, even if in so doing a slight excess in steel reinforcement is sometimes necessitated. In this connection the number of bars used in any member should be reduced to a minimum, provided all the requirements for bond, etc., are taken care of. A minimum number of stirrups of maximum size should be provided to reduce labour cost.

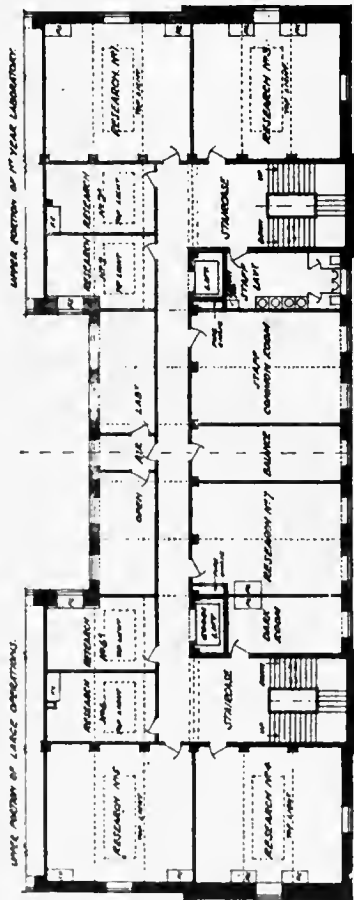
OBITUARY.

Mr. George Woollisroft Rhead, R.E., died at Ewell Park, Surrey, on the 30th ult. Born at Newcastle, Staffs, in 1855, he served a probationary period at Minton's China Works, and after two years' study at the Royal Training College travelled in France and Italy and produced a series of studies of Norman and Breton peasant life, which were exhibited at the Royal Academy and other galleries. For a time he was engaged in designing for stained glass, and made designs for windows in Chichester Cathedral and other public buildings. As a painter he did much mural decoration, and examples of his work in this direction are to be seen at the Holloway College, the Guildhall, and the Falstaff Club. Mr. Rhead was a more or less regular exhibitor at the Royal Academy for forty years, and is represented this year by a picture in oils entitled "The Advent of Winter." He was headmaster of the Putney, Borough Polytechnic, and Norwood Schools of Art, a member of the Art Workers' Guild, a member of the Council of the Arts and Crafts Society, and an examiner under the Board of Education.

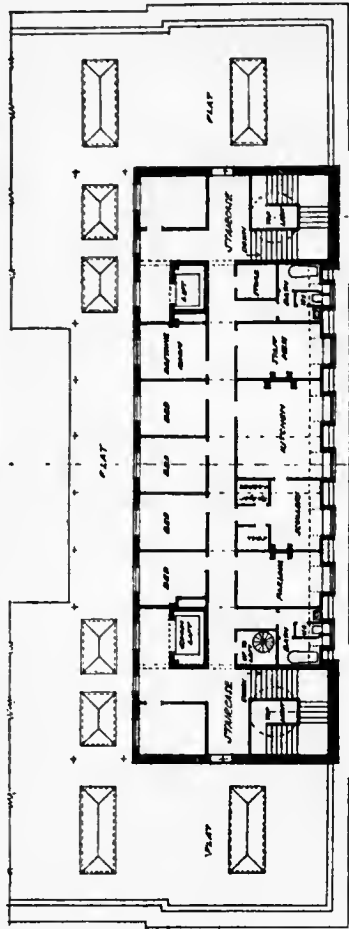
The following have been elected members of the Royal Institute of Painters in Water Colours:—Mr. George Houston, R.S.A., R.S.W., Mr. Sutton Palmer, and Mr. William Pitcher. Membership of the Royal Institute is limited to 100, exclusive of honorary and lady members.

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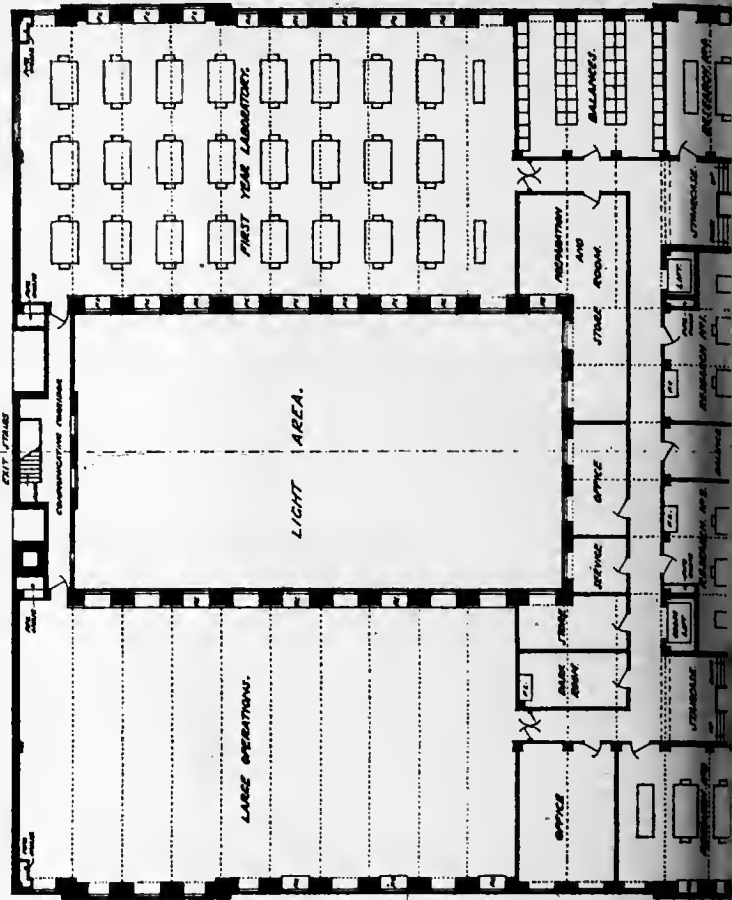
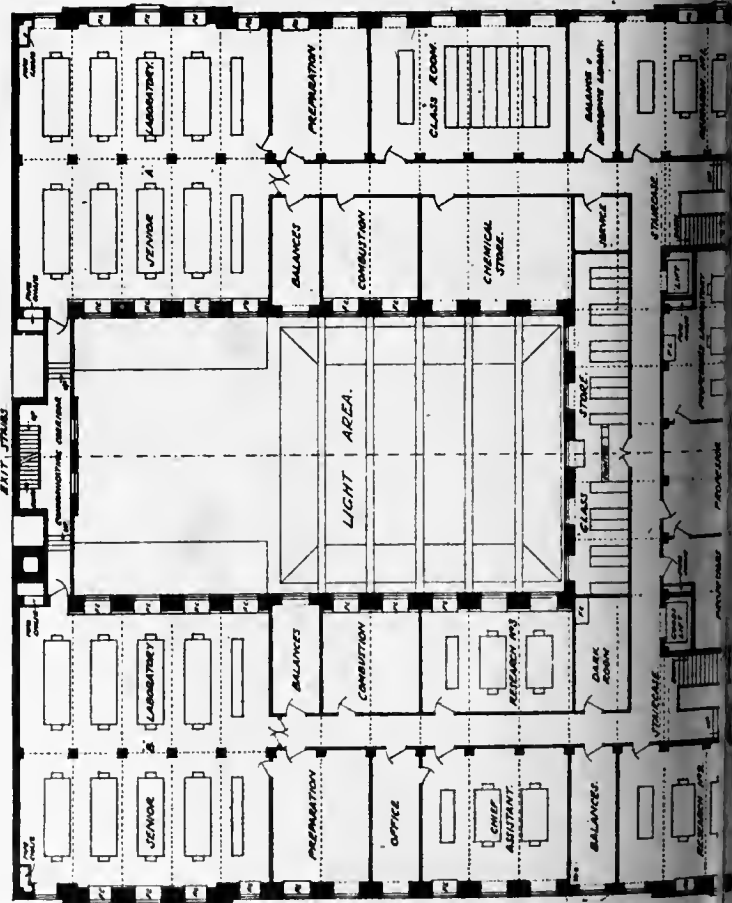
THE BUILDING NEWS, MAY 14, 1920.



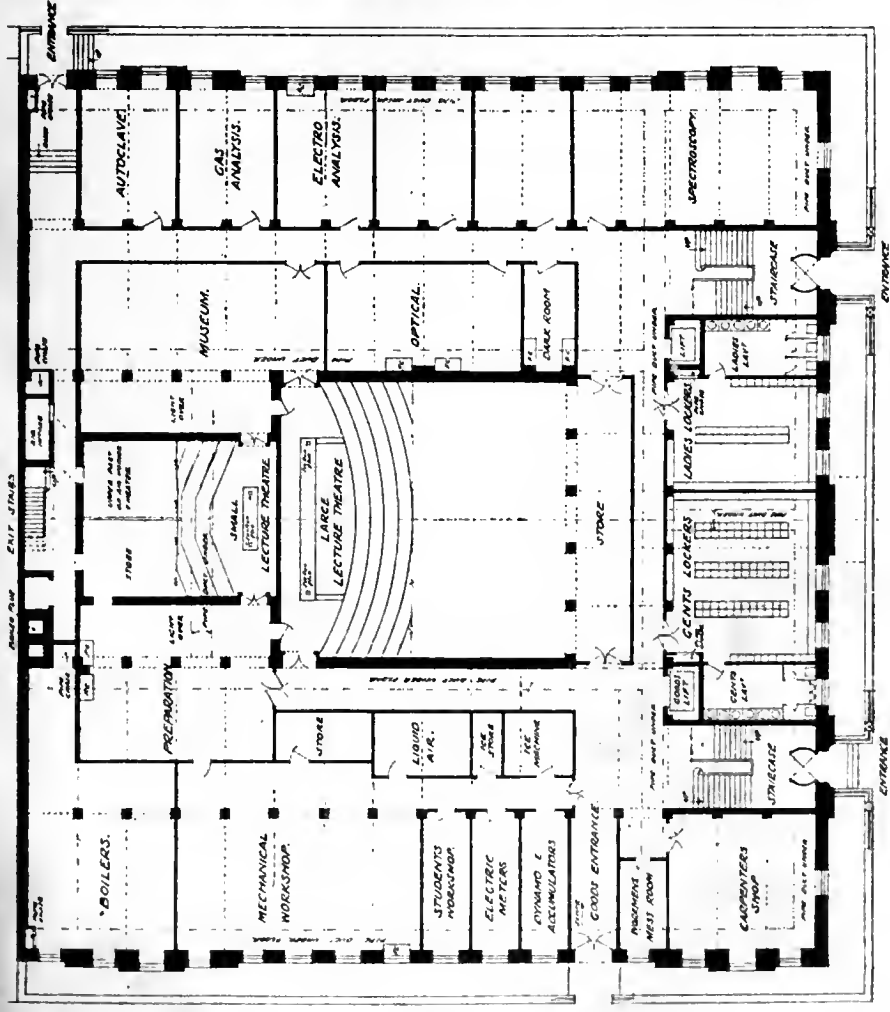
THIRD FLOOR PLAN.



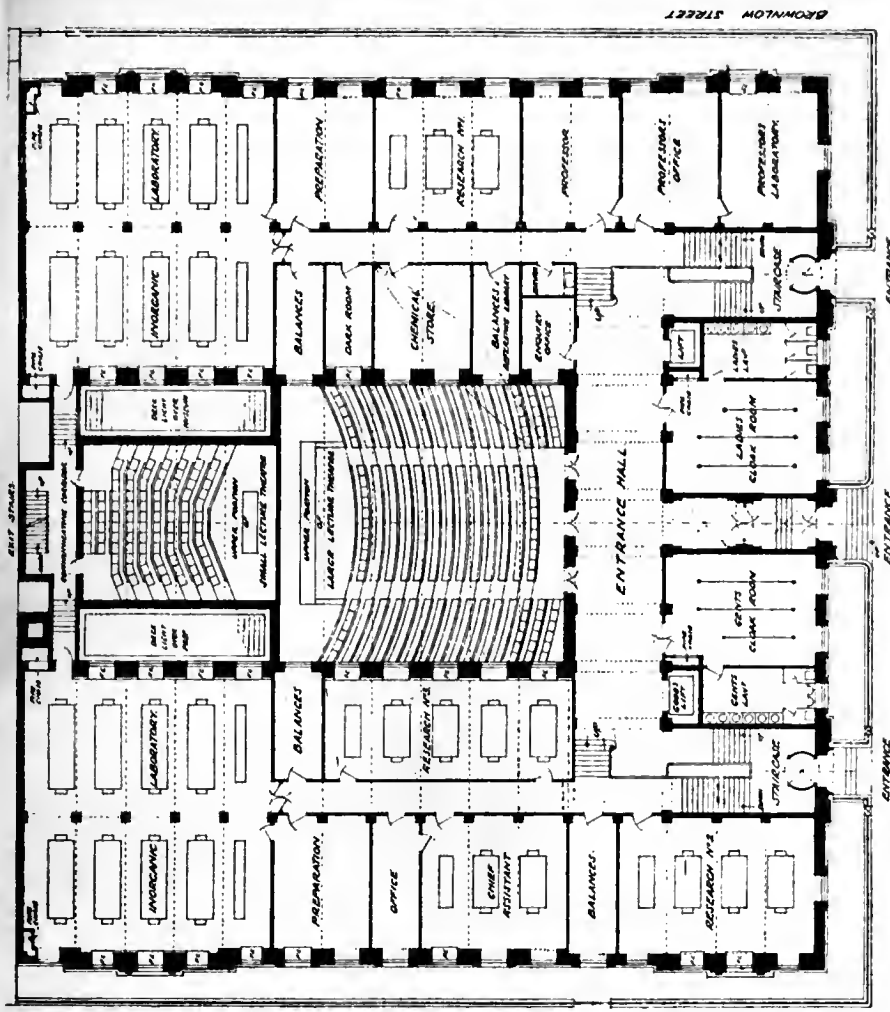
FOURTH FLOOR PLAN.



FIRST FLOOR PLAN.



SECOND FLOOR PLAN.



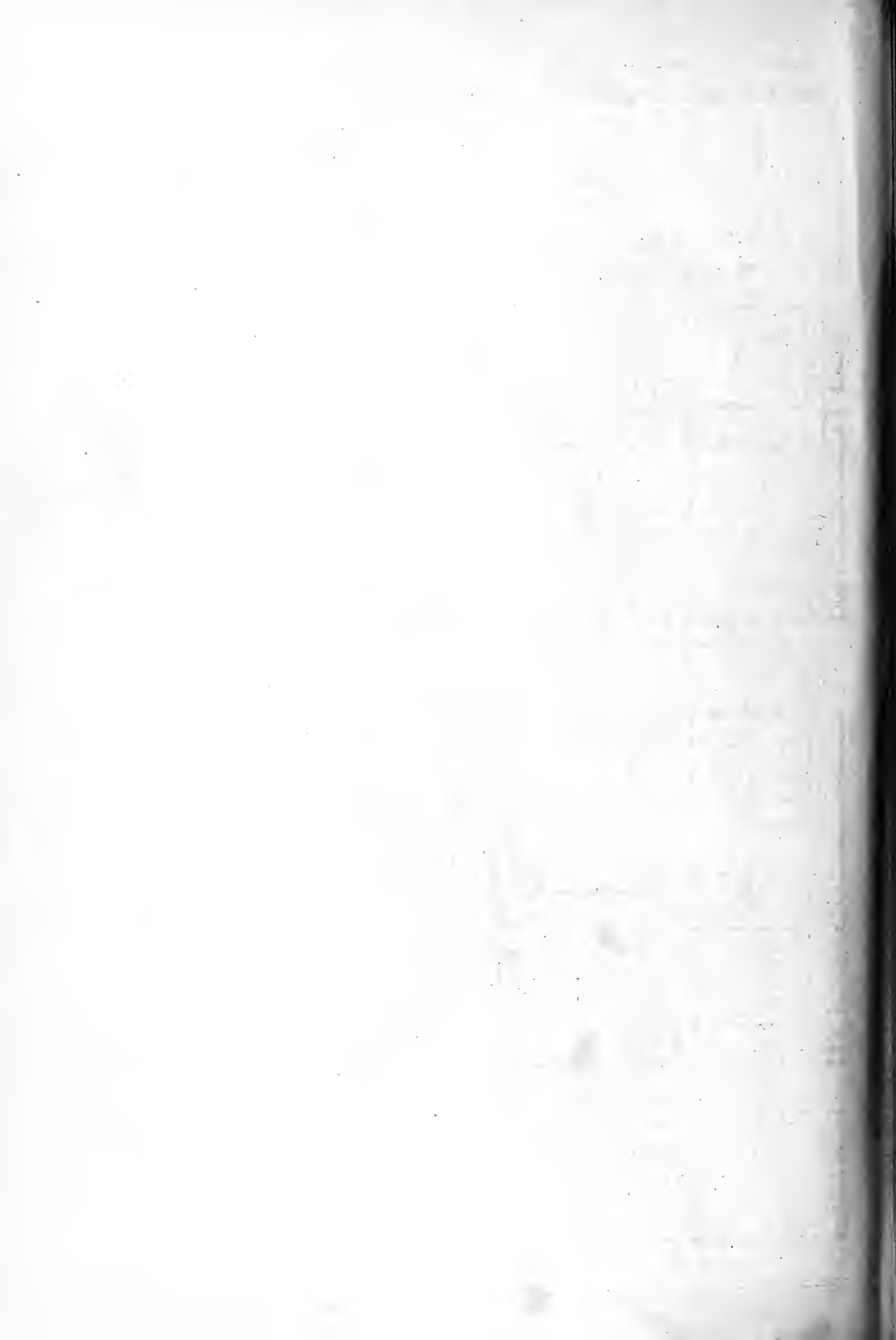
LOWER GROUND FLOOR PLAN.

UPPER GROUND FLOOR PLAN.

LIVERPOOL UNIVERSITY. NEW CHEMICAL LABORATORIES.

Messrs. F. G. Briggs and Arnold Thornely, F.F.R.I.B.A., Architects.

BRIGGS & THORNELLY
ARCHITECTS
ROYAL LIVER BUILDING
LIVERPOOL.



373-6.



FIG. 1. — *Front View.*

NEW CHEMICAL LABORATORIES FOR
Messrs. F. G. BRIGGS and ARNOTT

MAY 14, 1920.



UNIVERSITY OF LIVERPOOL.
BRIGGS & THORNELY, F.F.R.I.B.A., Architects.



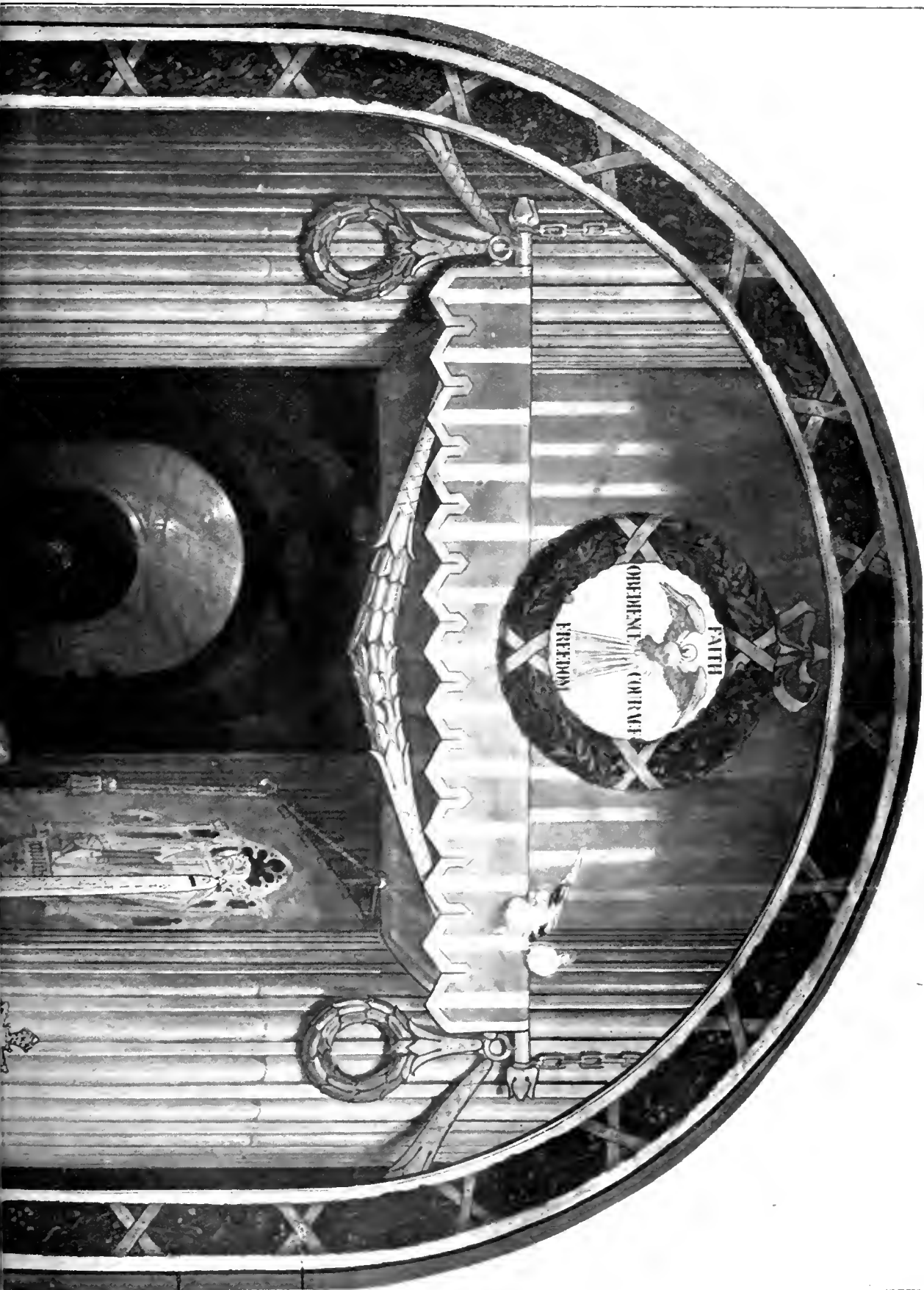
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THE NATIONAL PEACE THANKSGIVING SERVICE, JULY 6, 1919, ON THE STEPS OF
ST. PETER'S CATHEDRAL, LONDON: PANEL FOR THE ROYAL EXCHANGE.

Painted by Mr. FRANK O. SALISBURY, Royal Academy, 1920.

THE BUILDING NEWS, MAY 14, 1920.



Our Illustrations.

THE NATIONAL PEACE THANKSGIVING SERVICE ON THE STEPS OF ST. PAUL'S CATHEDRAL, JULY 6, 1919.

This commemorative decoration occupies the position of honour in Gallery III. of the Royal Academy this year. The panel has been painted by Mr. Frank O. Salisbury for erection in the Royal Exchange. This is the third time that the same painter has received the commission for contributing to the national mural records ranged round the cortile of the same building. The moment selected is when the Archbishop of Canterbury is giving the blessing from the steps of St. Paul's Cathedral. The King solemnly stands bowed before all his people. Queen Mary, Queen Alexandra, the Prince of Wales, Prince Albert, and Princess Mary are grouped on the steps. Others who participate in the service include the Bishop of London, Dean Inge, Archdeacon Holmes, Canon Simpson, Canon Alexander, Sir John McClure, Dr. Barber, and Dr. Kilgour. These last three named represent the Nonconformist churches, while the Lord Mayor, representing the City of London, bears the famous civic sword. In the foreground are seen the State trumpeters. The decorative composition is boldly conceived, including two of the massive columns of Wren's great west portal, the temporary red and gold canopy being included. The depth of the interior of the cathedral, lit up with a shaft of gold, makes a striking background as a setting to this historic scene. The elaborate copes of the Archbishop of Canterbury and the Bishop of London, while furnishing a contrast, do not detract from the central figures. The King is wearing naval uniform. On a tablet beneath, inscribed in gold, are the words, "Quoted from the order of the service, 'Not unto us, not unto us, but unto Thy name give the praise.'" After the exhibition at Burlington House closes, the panel will be presented to the City by the donor, Sir Horace Brooks Marshall.

PROPOSED CHEMICAL LABORATORIES, LIVERPOOL UNIVERSITY.

We give the Royal Academy view and a sheet of plans of this building, which is to be erected on an excellent site about 163 feet by 186 feet, with frontages to Brownlow Street, Dansie Street, and Pembroke Street. The greater part of it will be five stories in height, with an additional story over a part of the Dansie Street front, in the centre of which the principal entrance is placed. Two subsidiary entrances, giving direct access to the staircases, are also provided. The frontage line will be set back from the street line on three sides, a sunk area being provided, which gives good light and ventilation to the lower ground floor rooms. The general arrangement of the building is of the simplest character, and every endeavour has been made to provide the maximum amount of working space at a minimum of cost consistent with efficiency. Direct access to the lower ground floor is provided by means of two entrances from Dansie Street, one from Brownlow Street, and a fourth entrance, for heavy goods, from Pembroke Street. On this floor in the centre of the building a large lecture theatre for 325 and a small theatre for 100 students are provided, with a preparation room adjoining and common to both. In the wing of the building facing Pembroke Street are placed the boiler-house, mechanical workshop, carpenters' shop. In the wing facing Brownlow Street the following labora-

tories are provided: spectroscopic, optical, electro analysis, gas analysis, autoclave. The remaining rooms comprise a large museum, and locker rooms and lavatories for men and women students. The upper ground floor is approached by the principal entrance, and two side entrances, leading directly into the entrance hall. The hall, which is 16 feet wide, runs parallel with Dansie Street, and gives access to the back of the large lecture theatre, men and women students' cloak rooms adjoining the entrances, and at either end to the two staircases serving the upper floors. A goods lift and passenger lift are placed near the staircases, and run the whole height of the building. On this floor are also provided two large laboratories for inorganic chemistry, preparation rooms, balance rooms, several research laboratories, professors' and assistants' rooms. The first floor comprises two large senior laboratories, several research laboratories, preparation, balance, store, and combustion rooms, classroom, professors' rooms, etc. On the second floor a large laboratory for first-year students, 94 feet by 52 feet, occupies the greater part of the Brownlow Street frontage, a laboratory for "large operations" of similar size being placed along the Pembroke Street front. The remainder of the floor is mainly comprised of research laboratories. Further research laboratories are provided for on the third floor, and on the fourth floor a caretaker's house and staff rooms. It is proposed to use reinforced concrete in the construction of the piers, columns, and beams, and the floors and staircases will be fire-resisting throughout. The exterior of the building will be of brick, with stone dressings most sparingly used. The elevators are of a very simple character, designed after the manner of the Georgian period. It has been felt that in the design of the building, utility should have first consideration. If any architectural effect be achieved, it should be by good proportion and the use of suitable materials, and without recourse to elaborate and costly ornament. The architects are Messrs. Briggs and Thornely, F.F.R.I.B.A., Royal Liver Building, Liverpool.

SEWAGE.*

A Chadwick lecture, at the Town Hall, Colchester, Wednesday, May 12, 1920. Chairman, A. Owen Ward, Esq., Mayor of Colchester.

The lecturer began by pointing out that man's habit of congregating in great cities gives rise to some very difficult problems. He needs a constant supply of food, water, and light; and he gives off a vast quantity of waste products, which must be promptly disposed of.

Moses laid down a code of sanitary law which it would be hard to improve upon, but it is not applicable to the crowded conditions of modern life. These are best met by the water-carriage system, under which the clean water which is supplied to a town returns ultimately to the sewers charged with every conceivable kind of pollution.

When sewers were first laid the sewage was discharged without treatment of any kind into the rivers, some of which soon became little better than open sewers. The water in these was indescribably filthy and laden with floating solids. Putrescent deposits formed on the beds of the rivers, and offensive gases were given off. The water was robbed of its oxygen, and could no longer support fish life. The conditions became so intolerable that an outcry at last arose, and a succession of Royal Commissions and Committees was set up to find a remedy. Rivers Pollution Prevention Acts were passed; and in due

course the purification of sewage was seriously taken in hand.

For a whole generation progress was slow and uncertain. The purification of sewage is the Dark Continent of the engineer, and for a long time we had no clear idea of what we were aiming at.

At the outset the eyes of local authorities turned hopefully towards sewage farms. They expected not only to get rid of their sewage, but to obtain a profit from it. These hopes in the great majority of cases were doomed to be blasted. Sewage farms may pay in India or the desert regions of America, but in our humid climate the land can rarely deal with the enormous volumes of water which the sewers bring down.

Next came chemical precipitations. Great expectations were entertained of the manurial value of the sludge. But the fertilising matter in sludge, like the gold in sea water, is present in such exceedingly minute quantities as to be all but valueless. Precipitation, moreover, removes only that portion of the polluting matter which is present in a solid form. By far the greater part of it remains dissolved in the liquid.

We have floundered on from one failure to another, and wasted money by the million. We have tried to sweep back the Atlantic with a mop. Nature provides myriads of tiny scavengers to deal with our waste products, and the first thing we did was to kill off the scavengers.

Nature is a consummate manager. Through countless ages she has provided bountifully for the living creatures which inhabit this globe. She has only a small quantity of material to feed them on, but she uses the same materials over and over again. And she keeps her house clean. Nature establishes a routine—a balance. Man blunders into her orderly household. He robs her coal cellar and her larder, and he makes a terrible mess. And he has not in the least realised what he has been doing.

The modern art of sewage purification consists of the utilisation of those natural agents which we have ignored or even combated in the past. Pasteur was the first to point out that fermentation is the outcome of the life processes of certain exceedingly minute organisms. Warington and Winogradsky followed with their investigations into the production of nitrates in the soil. It remained to turn their discoveries to practical account.

There are two distinct stages in the purification of sewage. The liquid must first be freed from its suspended solids; the dissolved polluting matter must then be rendered harmless. The first operation is a mechanical, and the second a chemical one. The purification of foul organic matter is essentially a process of oxidation. Nature herself stands ready to purify our sewage. The task of the sewage works engineer is to provide her with suitable workshops.

The septic tank is the workshop in which the first stage of the purification is carried out. It is simply a chamber, closed or open, and large enough to hold about one day's flow. It is kept constantly full, and the sewage passes through it continuously, but so slowly as to be virtually at rest. The solids separate themselves from the liquid, rising to the surface or falling to the bottom, according to their specific gravity. They are then fiercely attacked by the microbes which are cultivated in the tank, and most of the organic matter is ultimately liquefied or resolved into gas. Where the sewage is purely domestic nearly the whole of the organic solids may be destroyed; but where mud or other insoluble matter finds its way into the tanks a good deal of sludge may remain to be dealt with. The organisms employed in the septic tank are "anaerobic"—they thrive in the absence of oxygen. Other methods of "preliminary treatment" have been devised in which the sewage is dealt with under more or less "aerobic" conditions. Larger forms of life, such as insects and worms, also play their part.

At the Town Hall, Colchester, Thursday, May 13, 1920, chairman, Alderman E. A. Blaxill (chairman of the Roads and Drainage Committee).

Speaking of the stages of sewage purification, the lecturer said:—

* By Arthur J. Martin, M.Inst.C.E., F.G.S., F.R.San.Inst., President Association of Managers of Sewage Disposal Works, Past President Institution of Sanitary Engineers.

In the second stage of the purification aerobic conditions are essential, for the work consists in oxidising the products of the decomposition which takes place in the first stage. To effect this it is necessary to bring the polluting matter to be oxidised into intimate contact with atmospheric oxygen in the presence of the organisms whereby the polluting matter and the oxygen are brought into combination. This contact may be brought about in a large body of water, in the soil, or in a "filter" constructed for the purpose.

The first method is known as "disposal by dilution." The volume of diluting water must be great, or the oxygen which is dissolved in it will be quickly exhausted, and instead of purification we shall have pollution. The last Royal Commission which dealt with the subject laid down certain ratios of diluting water to sewage, varying with the amount of treatment which the latter received before discharge. Where the volume of the river is 500 times that of the sewage all standards may be waived, and the sewage discharged in a crude condition. Rivers large enough to receive the untreated sewage of a great city are rare in this country, but are common in Germany and the United States.

Land may be used to purify sewage either by "filtration" or "broad irrigation," the sewage in the former case percolating downwards through the soil; and in the latter merely passing over its surface. Which of these two methods is used depends on the openness or the reverse of the soil and sub-soil, and land of the right quality is rarely available in sufficient area to purify the sewage of a large town.

In the absence of suitable land recourse is generally had to artificial filters, constructed of broken clinker, destructor slag, or similar material. The material itself takes little or no part in the purification, but it serves as the home for the "nitrifying bacteria" which bring about the combination of the dissolved polluting matter and the oxygen of the air. In the filtration of sewage three things are essential—an adequate supply of air, free drainage, and a uniform distribution of the sewage over the filter. The earlier filters, or "contact beds," as they were called, were provided with inlet and outlet valves, and the spaces between the particles of material were successively filled with sewage effluent, held full, emptied, and left to drain and aerate.

In the later type, or "trickling filter," the outlet is never closed; and the effluent, which is showered on to the filter from fixed jets or a revolving arm trickles down in thin films over the surfaces of the particles of material and passes away continuously. A good filter effects a purification of 80 or 90 per cent., and if the preliminary tank treatment is efficiently carried out the filtering material will remain clean for many years. Trickling filters are generally to be preferred to contact beds, but in certain situations the latter may be the more advantageous.

It is the unexpected which always happens. Scarcely had engineers settled down to septic (or sedimentation) tanks and trickling filters as the standard means for purifying sewage when Dr. Fowler and Dr. Ardern threw a bombshell into the camp in the shape of the "activated sludge" process. Sludge, which had always been the bugbear of the sewage works manager, suddenly became his chief ally. In place of tanks followed by filters, the purification of the sewage is carried to completion in a tank. The activated sludge tank is virtually a fluid contact bed. The lumps of clinker on which the nitrifying bacteria establish themselves are replaced by particles of sludge. This sludge, after being "activated" by blowing air through it for several days, is placed in the tank with the sewage, through which air is then forced for some hours. After a time, varying with the strength of the sewage, the character of the latter is completely changed. It is no longer offensive, and is in fact indistinguishable from an ordinary filtered effluent. The new process has been very favourably received both in this country and in America. Its chief drawback is the great bulk of the resultant sludge and the difficulty of drying it.

A generation ago the chief preoccupation

of the sewage works manager was the production of a satisfactory effluent. That difficulty has now been solved, and the problem which now confronts him is the economical disposal of his sludge. He runs it into lagoons, he digs it into the land, he presses it into cake, or he barges it out to sea. Now and then, if he is lucky, a farmer will cart some of it away; but more often it is a source of great trouble, anxiety, and expense.

There is no "best process" of sewage treatment. Every case must be dealt with on its own merits. And after the appropriate method has been selected, everything depends upon the care with which the details are worked out, and above all on the subsequent management of the works. The greatest credit is due to the managers of our sewage works for the results which they have obtained in the face of the difficulties caused by the war.

The effluent from a well designed, properly managed purification works is uniformly clear, inoffensive, and non-putrescible; but it is not a drinking water. The danger from sewage pollution lies, not in its offensiveness, but in the possible presence of the germs of disease, and these are not destroyed with certainty by any purification process in ordinary use. Where absolute certainty is required, as, for instance, in the case of an outfall above a source of water supply or near an oyster laying, it can only be obtained by sterilising the sewage, either by slow filtration through sand or by the application of a chemical such as lime in excess or chloride of lime. But the sterilisation of the sewage will go for nothing if there are any storm overflows by which any untreated sewage, however dilute, is liable to escape.

There is no other art, with the possible exception of that of war, which approaches the purification of sewage in the diversity of the means whereby the end in view may be attained, or the kaleidoscopic changes which it has undergone. Have we at last reached finality? In the light of all that has happened in the past, it would be rash indeed to say that there are no fresh surprises in store for us.

The sanitarian is notoriously a wasteful animal—especially in his dealings with sewage. Year by year we draw heavily on the fertility of our soil; year by year plant-food to the value of a score of million pounds flows unused and unheeded out to sea. We make good the loss by the use of artificial manures, but these are fast becoming exhausted, and what have we to take their place? The war has given us a foretaste of what a scarcity of food means to a teeming population. Can we (asked the lecturer) look forward with complacency to the day when a whole nation, maddened by hunger, will curse the thriftlessness which has robbed it of the necessities of life?

"I know, he went on, the old silly gibe—"What has posterity done for me? Why should I take any thought for posterity?" Let me, he answered, remind you what we ourselves owe to those who have gone before us—the inventors and explorers, the heroes of science, the men who won our liberties, the founders of modern medicine, Edwin Chadwick and his fellow-workers in sanitation. We can never repay our debt to those men; but shall we not recognise our duty to those who will come after us?

Inquiries concerning this course are kindly allowed to Mrs. Councillor P. R. Green, 17, Beverley Road, Colchester, and further particulars of Chadwick public lectures may be obtained of the Secretary, Mrs. Aubrey Richardson, O.B.E., at the offices of the Trust, 40 (6th) Queen Anne's Chambers, Westminster, S.W.1.

Replying in Parliamentary Papers to a question whether he is yet ready to introduce a Bill to ration housing accommodation, Dr. Addison states that he does not think a proposal of the kind would be practicable.

The Wealdstone Council have refused to carry out the modifications suggested by the Housing Board in their main building scheme. Their surveyor said that the suggestions of the Board with regard to drains and inspection were scandalous.

Our Office Table.

A process for hardening soft wood, preserving it against attack by vermin, and fire-proofing it, patented by A. Lambert, 46, Via Gregoriana, Rome, consists in impregnating the wood with a solution of metallic salts, such as an ammoniacal solution of copper and zinc salts, mixed with borax, potassium chromate, and cement powder, with or without a small proportion of salicylic acid and sodium fluoride. A suitable impregnating-mixture comprises 4 to 6 parts by weight of copper salts and 2 to 4 parts of zinc salts dissolved in strong ammonia, 2 to 3 parts of borax and 1 to 2 parts of potassium chromate dissolved in 10 to 20 parts of water, and 5 to 10 parts of Portland or like cement.

Applications for the R.E. War Memorial Scholarships may now be sent to the Secretary, R.E. War Benefits Committee, R.E. Institute, Chatham. The committee, in adjudicating upon these applications, will give primary consideration to the necessity of the case. "A" Scholarships of £40 per annum, for children of officers and other ranks of Royal Engineers, including Regulars, Special Reserve, Territorial Force, and New Army, who before the war were in a position to send their children to public schools, etc. Tenable between the ages of ten and eighteen years, the grants to be reviewed after four years. Ten scholarships at present available. "B" Scholarships of £15 per annum, for children of Warrant Officers, N.C.O.'s, and men, to assist the children to go on to a technical or secondary school. Tenable between the ages of thirteen and sixteen years. Forty scholarships at present available. "C" Kitchener Scholarships, at present limited to one of £40, and two of £15, under the same conditions as "A" and "B" respectively. Applications to be considered in the first adjudication should be received by June 1, 1920. Forms of application can be obtained from the secretary. For the present, owing to the large number of casualties in the Great War, the issue of these scholarships will be confined to children or dependents of officers and other ranks, either killed in action, died of wounds, or disease contracted in the Service, or permanently disabled therein.

The Birmingham Bond Campaign has proved an utter failure, not one thirtieth of the sum required being subscribed. Only £162,925 was raised, compared with £5,000,000 required for the current year for housing purposes. The Housing Committee has told the Ministry of Health that it is the duty of the Government, when local authorities have endeavoured unsuccessfully to raise the amounts required by means of a housing bonds campaign, as suggested by the Government, to finance them from State funds to the extent of the ascertained deficiency between the amount secured by housing bonds and the amount required for housing purposes.

The marriage took place very quietly last Monday, at the Chapel Royal, Savoy, of Captain David Euan Wallace, 2nd Life Guards, son of the late Mr. John Wallace, of Glasgall, and of Mrs. Wallace, Grosvenor Street, W., and Miss Barbara Lutyens, eldest daughter of Sir Edwin Landseer Lutyens and Lady Emily Lutyens, of 13, Mansfield Street, W. The bride, who was given away by her father, wore a Renaissance gown of cloth of gold draped with an old Brussels lace veil, lent by the Countess of Lytton, and carried a bouquet of lilies-of-the-valley. She was attended by six bridesmaids—namely, Miss Ursula Lutyens, Miss Betty Lutyens, and Miss Mary Lutyens (her sisters), Lady Hermione and Lady Darina Lytton, and Miss Betty Balfour (cousins), wearing Ariel dresses of cream net over satin, with gold sashes and gold bandeaux, with posies of forget-me-nots in harmony with bouquets of the same flower. Sir Archibald Sinclair, of Ulster, a brother officer, was best man, and the Rev. Hugh Chapman officiated. A luncheon was given after the ceremony at the London house of the bride's parents.

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Currente Calamo.

Natural indignation was expressed at Tuesday's meeting of the London County Council at the stipulation of the Ministry of Health that the Council's new houses at Roehampton shall have rooms not more than 8 ft. high. Mr. Gosling protested against the creation of more slums, and Major Gray urged the Council to tell the Ministry of Health they could "keep their State grant." Mr. E. M. Dence said the borough councils as well as the County Council had had to face the overriding methods of the Ministry. A resolution was unanimously approved in favour of a height of 8 ft. 6 in., and asking the Ministry to receive a deputation. It was stated that the Council had built twenty-four houses since the war, and that by Monday 108 people would be in occupation of them. We trust the London County Council will stick to its guns and refuse most emphatically to build unhealthy houses.

The Bishop of London's somewhat autocratic reply to the indignant remonstrances of the Court of Common Council is not an encouraging one, and his appeal to the citizens of London for more money for the Church is somewhat mistimed, we fear. It may be true, as the *Morning Post* says, that the "Church is in dire need of money, and is reduced, so to speak, to selling her ancestors," and that "it would be well if the Church, which is also appealing to the public for the gift of a large sum of money, could formulate a scheme for the betterment of her financial system, in default of which it will be difficult to enlist public support, either for the appeal for monetary help or for the proposals of the Commissioners in respect of the City churches." We think it will be very difficult, while the Church has no better regard for the good provision made by the dead and gone citizens of London to provide fitting buildings for her services than to scrap churches wholesale in the face of the fact that her clergy who can and will work have no difficulty in beneficially utilising many it is sought to destroy.

An interim report will shortly be presented by the Departmental Committee on Smoke Abatement, of which Lord

Newton is chairman. It finds that the home fires which kept burning account for half the volume of smoke, and more than half the volume of poison in the atmosphere of big towns. The much-abused factory chimney is a less culpable offender. Dr. Addison will doubtless at once stop the old-fashioned grates and ranges in his new houses. According to figures given in the report, Manchester spends 7½d. per house per week more than Harrogate (or an annual sum of a quarter of a million) on washing materials, and its laundresses stand over the washtub an extra amount of 668 years in every twelve months, thanks to the defiling smoke-pall which too often hangs over it. Leeds, similarly, enjoys 17 per cent. less sunshine than the country folk who live four miles beyond its boundaries. Dr. Addison's new houses (when we get them) will doubtless be smokeless?

In his presidential address at the annual meeting of the Midland Students' Society of the Institute of Municipal Treasurers and Accountants (Incorporated) at Dudley last Saturday, Mr. A. W. Harley (Dudley borough treasurer) said:—Those students who came from Birmingham could understand the difficulty of raising money locally for housing. Relying on the Government's promise to finance authorities with a rateable value of less than £200,000, Dudley had embarked upon a Housing Bonds scheme. The result of Birmingham's big effort and the experience of other large towns was, however, at present very disappointing, but not very surprising. The total indebtedness of most boroughs would presently bear faint resemblance to the comparatively small amounts of pre-war days, and before long they would probably be faced with further responsibilities by the transfer of the work of the administration of the Poor-law. Sir George Bean, who presided, said the question of financing housing schemes was a very awkward affair. He instanced the failure of the Housing Bonds scheme at Birmingham and elsewhere, remarking that this was simply due to the fact that there was no co-ordination between the various Government departments issuing requests for bonds, inasmuch as immediately Housing Bonds were issued at 6 per cent. the Treasury issued bills at 7 per cent. If it

had not been for every mistake the Chancellor of the Exchequer had made during the last few months they would have got their money for housing. If there were to be a secure country and contented workers the latter must have houses, and until they had them there would be a mercilessly dissatisfied community who would constitute a danger to all classes. That, doubtless, is true, but it is also true that the phenomenal rise in the cost of labour, accompanied by a decreased product, is only a less fatal hindrance to housing than the financial policy of the Government.

Serious overcrowding exists in the area of the Bredbury and Romiley District Council. The need for further accommodation was recognised, and steps taken before August of last year. The requirements were returned at 450 houses, and this return was approved by the Ministry of Health. The Council purchased 22 acres of building land for £1,820. This was early last year, but not a single house has yet been built, not even a start made. In August, 1919, the surveyor's plans and estimates of costs of streets and sewerage of £9,563 were approved by the Council. The surveyor's lay-out of the land and estimates, etc., for street works, etc., were approved by the Housing Commissioner, and the whole of the money required for the purchase of land and street works was borrowed locally at 5½ per cent. The Council appointed architects, and co-opted six ladies on the Housing Committee to assist with their views on the designing of the houses. The architects' designs were approved by the Housing Commissioner on August 29, 1919, and on September 17, 1919, a tender amounting to £88,993 for the building of 90 houses was accepted by the Council, and sent to the Housing Commissioner for his observations and report. The Housing Commissioner refused to sanction this tender, contending that it was excessive in price. On January 12, 1920, a revised tender, amounting to £76,683 for the 90 houses, based on September prices of labour and materials, was accepted by the Council and the Housing Commissioner. On interviewing the contractor to settle terms of contract, he refused to accept Clause 40 of the model form, there being no provision therein for a percentage of profit on the increases allowed under this clause for increased costs of labour and materials. On March 3,

1920, the Housing Commissioner stated that the Ministry would under no circumstances allow the payment of a percentage of profit claimed by the contractor, and suggested an interview of a Council deputation, contractor, and architects with the Housing Commissioner. On March 5, 1920, an interview took place at which it was agreed that the contractor should put in a revised firm tender to include all increases in labour and materials to date of signing contract. Revised tender amounting to £94,000 for the 90 houses based on this arrangement has been received, and now the Housing Commissioner has refused to recommend its acceptance owing to its being considered excessive in price. It is now suggested that the Council advertise for further tenders based on the same conditions obtaining as regards the one received of £94,000. On March 29, 1920, the Council wrote Dr. Addison, giving him a résumé of the position, pointing out where, in their opinion, the responsibility for delay occurred. No acknowledgment or reply to this letter has been received. From the foregoing statement it will be observed (comments the Council) that had the Ministry of Health sanctioned the tender of £88,993 submitted to them in September, 1919, not only would houses have by this time been built and ready for occupation, but the district would also have secured better houses and have saved a matter of over £5,000.

Local authorities throughout the Eastern Counties are greatly perplexed by the report of last Wednesday week's proceedings of the Walsingham District Council. The Walsingham Council has built a number of houses at Fakenham, and after much consideration decided upon rents which, in the judgment of the local authority, represent the limit of what can be paid by the agricultural workers, for whom the houses have been provided. So high was that limit that numbers of applications which had been made for houses were withdrawn when the rents were announced on the ground that they were rents beyond the applicants' means, and the number of applications still persisted in was barely sufficient to provide the Council with tenants for the number of houses built. Now the Ministry of Health, apparently knowing nothing of the local circumstances, steps in and condemns these rents as insufficient, and insists upon new rents being fixed on a much higher scale. These new rents work out at £1 a week, for agricultural labourers a sum which the Walsingham Council rightly describes as being out of all proportion to the labourers' ability to pay. The immediate result of this insistence on impossible rents is that the Council decided last Friday to incur no further obligations by proceeding with any housing scheme until this question of rents is settled. Mr. George Edwards, at the Council meeting, expressed the opinion that this action on the part of the Ministry of Health will tend "to stop housing enterprises throughout the length and breadth of the country" and it is difficult to see how it can result otherwise.

"THE DOCUMENT" OF 1859.

We do not want to pose as prophets of evil, but we cannot shut our eyes to the probability that we are within sight of as disastrous an outcome of present labour agitation, in connection, at any rate, with our own great group of industries, as paralysed the building trades in 1859. It is "sixty years since" England was slowly recovering from the baleful effects of the Crimean War and the Indian Mutiny. Favoured to a greater extent than to-day by statesmen who knew their business, and by financiers who refrained from adding to the burdens of Capital and Labour alike by the reckless expenditure and capricious control which is paralysing us at the present time, the country was slowly but steadily emerging from its troubles when it was startled by the obvious intentions of Napoleon the Third to make our own shores the ultimate battlefields of the vast military Powers of Europe; and, thrusting aside the indifference of the War Office, the nation responded enthusiastically and patriotically to the call to arms, and the great Volunteer movement, as we believed then, and have always believed since, changed the programme of the perpetrator of the coup d'état, and diverted his attention to other schemes of aggrandisement, which ended with his downfall in 1870. We remember in our issue of May 6, 1859, our own appeal, especially to the professional classes, and the alacrity with which it, and those made by the clearer-sighted of the time of our leading contemporaries, was responded to, and with satisfaction that the solidity of that response was most marked amongst architects, and never languished, even when in after years the danger seemed to have passed. We recall with satisfaction especially the exertions of Colonel Edis and Lacy Ridge and others to raise the Artists' Corps, with which so many architects were associated, to lift it to and keep it in the very front rank of fitness which enabled it to achieve the splendid service it rendered in the late war, and which was so markedly recognised by Lord French, and we trust that the King's spirited appeal last week to those responsible for the success of the Territorial Army it is sought to raise to-day will not lack their support.

In 1859, as we have said, as now, we had grave labour troubles. For some eighteen months there had been a persistent agitation for a nine-hours, instead of a ten-hours day in the building trades, but with the same wages, and for the right of the trade unions to coerce and exclude workmen who were averse to strikes. During that period frequent letters and comments thereon will be found in our volumes of 1858 and 1859. On April 20, 1859, a meeting of the London Master Builders, at Freemasons' Tavern, resolved to refuse the demand for the nine-hours day. Some were inclined to concede it, but from the speeches of its advocates at various public demonstrations it was so evident that a strike was intended the majority carried the day. In our issue of May 27, 1859, we insisted "that the right conquered to work for no more than nine hours would be illusory and a mockery if there were no more work to give out." Very soon the truth of that prediction was disastrously demonstrated. In our issue of July 22, 1859, appeared a peremptory demand from the leaders of the Nine Hours League, in five leading building firms, and on the same date, commenting thereon, we remarked it was evident the men were preparing for their further long-meditated struggle, and equally so that the employers would combine to resist it. On the same day a deputation of the men waited on Messrs. George Trollope and Sons and demanded

an answer. They were courteously referred to the decision of the Master Builders, at Freemasons' Tavern, on April 20. On the following Monday morning about 400 of Messrs. Trollope's men struck, ostensibly because one of them who had signed the demand had been summarily discharged—an allegation which Mr. Trollope denied.

A great meeting of the London Master Builders was promptly held on the following Wednesday at Freemasons' Hall. Mr. Henry Lee presiding, a full report of which was given in our issue of July 29, 1859, at which, after full discussion, the following resolution was carried and a committee of twenty appointed to carry it into effect:—

"The men in the employ of Messrs. Trollope and Sons having struck for the purpose of obtaining the payment of ten hours for nine hours' work, and it appearing to this meeting that it is the intention of the conference of the building trades to order strikes to take place occasionally of the men in the employ of other masters—resolved that it is the opinion of this meeting that, in order to combat the movement which has arisen, the Metropolitan builders are compelled to close their establishments on August 6; but, taking into consideration the great number of men who discontinue the Society, that a committee of twenty be appointed to consider the best means of opening the doors again to such men as may be willing to work, independent of and not subject to the dictation of any society interfering with the labour of the working man, and that this meeting, at its rising, do adjourn to a day that may be appointed by the committee."

That many men all over the country did disapprove of the action of the strikers was evident from letters we received at the time, notably one from Mr. John Plummer, of Kettering, which we printed on p. 698 of our issue of July 29, 1859, and which is well worth reading to-day, especially that portion of it devoted to a criticism of the "Metropolitan Building Association," by which the strikers proposed to inaugurate "Direct Labour," on much the same lines as is being experimented with to-day in connection with housing. Another of his letters appeared on p. 718 of our issue of August 5, 1859. At a second meeting of the Master Builders a "Notice" was issued to the workmen—contemptuously styled "The Document,"—by Mr. George Potter, by which it was resolved to close all works and to require all applicants for employment to "pledge their word" to observe the following:—

"MEMORANDUM OF AGREEMENT.

"I declare that I am not now, nor will I during the continuance of my engagement with you become a member of or support any society which directly or indirectly interferes with the arrangements of this or any other establishment, or the hours or terms of labour, and that I recognise the right of employers and employed individually to make any trade engagements on which they agree."

Every workman will be distinctly required to pledge his word to the observance of these conditions, and on his name being entered on the file of the engagement book, and the duplicate engagement detached and handed to him, he may resume work.

Indignation meetings, deputations to the Government, speeches in Parliament, and threatened riots followed. An "Anti-Strike Committee," consisting of builders' foremen and non-society men was formed, which issued a manifesto declaring readiness to accept "The Document." Early in September the masters resolved to open their works, but only to such workmen as were prepared to accept or assent to it. Before the end of September it was evident that large numbers of men were returning to work under the terms of "The Document." The masons, especially, had had enough of the eight weeks' lock-out, and the secretary of the Masons' Society made a proposition, at an interview with Mr.

Myers, which he communicated to the Masters' Executive Committee offering the return of the masons to work ten hours a day as before if "The Document" was dispensed with. The masters declined, stating that upwards of 10,000 men were back to work under its conditions. By October 22, 12,226 men had returned to work under the conditions of "The Document." By November 11 the number had increased to over 16,000. On December 5 the masters met and resolved once again not to withdraw "The Document." By the end of February, 1860, the strike had fizzled out, and the masters having all the men they wanted, withdrew "The Document." The final report of the Masters' Executive Committee was given in our issues of February 10 and February 17, 1860. It congratulated the master builders on the success of the stand they had made, and advised the continuance of the Central Association.

Elsewhere in this issue will be found the results, so far, of the most recent attempts to meet the requirements of the men of the building trades for increased wages, based on the rise in prices of food and other common necessities of life. That rise is due, among other causes, and very largely, to the increased demands of labour. Some of the wiser labour leaders see it. At a meeting at Leeds last Friday, Mr. J. H. Thomas told the railwaymen that "Every advantage they got from their demands is not only nullified by the increase of the cost of living, but has the inevitable effect of creating a heavier burden for a large section of the community." He went on to show how old-age pensioners, people with moderate fixed incomes, and widows and children suffered. Mr. Bromley also admitted frankly that strikes for more wages brought them back to the same point every time. It is also the truth that every strike or increase of wages without one is accompanied by a diminution of the product of labour, which has fallen 50 per cent.—in some cases more—from the pre-war standard. Already the boom in the Lancashire textile trades is over, and many mills are closing down next week. Last Saturday one great Midland firm of iron-workers closed down and 4,000 people are out of work. Whether it is believed or not, we are certain the limit has been reached in our own and the other great industries of the country at which it will pay Capital better to stop work than to lose money. Dr. Addison has helped to bring about this conviction by stopping "luxury building." In ordinary bad times, when contracts were few, the builder, obliged, often against his will, to discharge his men engaged for the job, still strove to keep the shops open and to retain the older and more skilled workmen as far as possible. What inducement is there for him to do so to-day, or to pay continuous rises in wages for work he is not allowed to do?

Something like a deadlock exists for the moment in the printing trades. The unions asked for an increase of 20s. for men and 12s. 6d. for women in all districts of England and Wales outside London; 22s. 6d. for men and 15s. 6d. for women in Scotland; while the London workers demanded 15s. a week advance. The employers have offered 6s., which has been refused. Pressure is now being brought on the Joint Industrial Council to review the position, and there are hopes that a crisis may be averted. We hope it will, for most assuredly every newspaper, including this, already jointly harassed by the increased scarcity and dearth of paper, has only the choice of increasing its price or very materially decreasing its size, and, therefore, diminishing the number of men employed.

The same results will be felt by the miners and by the great army of men engaged in transit. In no industry is there any mysterious reserve fund of wealth that can be continually raided. If it is impossible to make this understood, we are all in for bad times indeed, for the capitalist will of necessity determine to resist further demands, not in the interest of himself, but in that of the community, by far the larger part of which consists of the labouring classes.

In this connection a most important judgment, delivered on Monday by Mr. Justice Bray, in the King's Bench Division, should be noted, which establishes the fact that voluntary collections must not be used as strike pay. The action was brought by James Alfred Sansom, Walter Scott, and Charles Leney, members of the London and Provincial Union of Licensed Vehicle Workers, against the union for a declaration that the sum collected by the sale of tickets during the dispute between the British Motor Cab Company, Limited, and their drivers in the early part of 1918 was for the benefit of the members of the union affected by the dispute, and that the union was bound to apply the money for that and no other purpose. The defendants said at the time of the lock-out the financial position of the union was such that if a portion of the ticket money had not been paid into the general account the union would have had to stop the payment of the lock-out money. Plaintiffs, in reply, submitted that if the funds of the union at the time were insufficient to pay the lock-out money it was the duty of the union to raise the necessary funds by making a levy on the members. Mr. Justice Bray, in his judgment, said the sums paid for tickets were voluntary payments by members for the purpose of helping the drivers locked out, and not to assist the union to discharge their liabilities. It was the duty of the union to pay the dispute pay, and if they had no funds at the moment it was their duty to pay the arrears as soon as they had funds, and they did not discharge that duty by making payments out of money which they held for a different purpose. His lordship thought that plaintiffs were entitled to a declaration and an injunction. There would be judgment for plaintiffs with costs, and, if necessary, he would settle the terms of both the declaration and the injunction.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

NEW YORK'S TWO GREAT RAILWAY STATIONS.

The two great railway stations of New York were the subject of a paper read before the Royal Institute of British Architects at its meeting at 9, Conduit Street, W., on Monday. The paper was the work of Mr. Ben J. Lubschetz (Fellow of the American Institute of Architects), but, its author not being present, it was read by the Hon. Secretary of the Society, Mr. Arthur Keen. Mr. Walter Cave (Vice-President) was in the chair. Previously to the reading of the paper some preliminary business was transacted, and among other things the death was announced of Mr. Edmund Kirby, who, it was stated, had been elected an Associate in 1867, a Fellow in 1883, and a Retired Fellow in 1917. He had been Past-President of the Liverpool Architectural Association, and had represented that body on the Institute Council. His son, Mr. Bertram Kirby, had been recently elected a Fellow of the Institute.

A vote of regret for the loss of Mr. Edmund Kirby, and of sympathy and condolence with Mr. Bertram Kirby, was passed, all standing.

The paper was then read. The two stations it described were the Pennsylvania and Grand Central Terminals. Comparing these it said that even a superficial analysis was sufficient to reveal the Grand Central as a *tour-de-force* in the Modern French School,

with clever, brilliant planning of great efficiency, but extremely complex and barely understandable without the most careful and painstaking scrutiny and study; whereas the Pennsylvania was a great Roman structure, big, monumental, dignified, and with a *parti* so simple and clean-cut that it revealed itself at a glance.

The Grand Central Station was described as being on two general levels, the principal level being mostly for the trans-Continental and other long-distance lines, and the lower level mostly for suburban short-distance lines or commuting service. The building apparently stood on a great terrace, the top of which was a promenade. The main building above the terrace was 300 ft. by 688 ft., below the street level the building area was 455 ft. by 745 ft. The keynote of the whole plan was the main concourse, 120 ft. wide, 272 ft. long, and 125 ft. high. Practically every outgoing or incoming passenger, except some of those using the suburban service on the lower level, was compelled to pass through this concourse as a matter of convenience and with direct connection with all parts of the terminal. The waiting-room was somewhat smaller and lower than the concourse, and was divided for men and women by a wide central aisle. On the right, at the east end were the women's retiring and comfort rooms; on the left or west end, the men's smoking and comfort rooms. The two great rooms were finished in Botticini marble, terra-cotta, and artificial stone, to harmonise with the marble in colour. The ceiling of the concourse was an elliptical barrel vault, sky-blue in colour, with the constellations, the Signs of the Zodiac, and part of the Milky Way painted on it in gold, while the ceiling of the waiting-room was flat and divided into five great panels by ornamental cornices.

The paper went into great detail describing the building, and was illustrated by lantern slides. Some of these gave views of the exterior. It said:—"From these the general character of the design may be seen. The base or wall of the terrace is of pink granite; the rest of the building is in Bedford limestone. The scale is tremendous. The great arched windows are 33 ft. wide and 60 ft. high. The arm of the figure of Mercury surmounting the clock is 12 ft. long. This large clock group emphasises the central feature of the building front, but at the same time dwarfs its other dimensions, so that it is difficult to grasp the scale. The design is grandiose and modern, and its triumphal arch *motif* suggests the great gateway. In a measure the exterior expresses the chief features of the plan, and altogether the Grand Central Terminal must be considered one of the great modern buildings."

The Pennsylvania Station was also very fully described. Its main waiting room, about 100 ft. by 300 ft. in size, and 150 ft. in height, was said to be probably the finest roofed-over space in America. It was finished in Travertine marble—a great deal of this being artificial, but a perfect match in colour and material to the genuine stone. The room was beautifully lighted by eight large arched clerestory windows;—"Below six of these windows are the panels containing the map decoration by Mr. Jules Guerin. The whole design, adapted from the Baths of Caracalla, possesses that grandeur which one's imagination attributes to its prototype. The soft tones of the Travertine marble, the pastel-like colours of the Guerin panels, the great sun-rays filtering through the high windows midst the vaulting, the magnificent scale of it all, produce an effect of impressive welcome to the stranger and of worthwhile cherished memory for the departing visitor. This most important room, the centre and heart of the whole architectural scheme, although called a general waiting-room, is not a waiting-room at all, but rather a great common room or lobby—a real vestibule to the city."

The train concourse was described as a vast space, about 200 ft. by 300 ft. in size, roofed over by exposed steel arches on steel columns, likewise exposed, the spaces between arches being glazed. The walls of the concourse were in masonry granite like the exterior, with some brick facing. The

steel work was well designed and of graceful lines. The frank revelation of structure was noteworthy; but the transition from masonry to steel where these materials came in juxtaposition at the walls was often awkward.

As with the other station, this one was described in detail and illustrated by lantern slides. Referring to these and speaking generally of the station, the author of the paper said:—"The exterior of the building is of pink granite. The design expresses the plan with reasonable clearness. Its outstanding feature is the vigorous Roman order used, almost Tuscan in character, although it approaches closely the Doric. The upper part of the general waiting-room with the great arched clerestory windows is an outstanding feature of the composition. Character, with the utmost simplicity and dignity and strength, is the distinguishing quality of the design, which has caused considerable controversy as to its appropriateness for a railroad station. (Hear, hear.) The Pennsylvania Station is planned and designed with the view of gaining architectural effect, and it succeeds admirably in this respect. One cannot help but feel, however, that if the travellers' convenience and comfort had been considered in combination with this effect, the greatest building of modern times might have resulted. The magnificent plan, as we have gone through it and analysed it, is one of long distances and many flights of stairs; the result has been that with time travellers have discovered the minor entrances and short-cut passages, which are numerous and which get them to and from trains more quickly, more conveniently, and with fewer steps, than the prescribed line of circulation indicated by the plan. For instance, passengers reaching the station by cab or by subway or from Thirty-fourth Street usually reach their trains, unless they must buy a ticket, by several uninteresting sub-surface passages, and the magnificent general waiting-room fails in its function: it cannot impart its glorious architectural impression to a traveller who does not come within the range of its spell, because he saves time and energy by taking another path."

Professor Adshead moved a vote of thanks to Mr. Lubschetz for his paper, and to Mr. Arthur Keen for reading it. He said they all regretted very much the absence of the author of the paper. He (Professor Adshead) had seen these two stations at the time of their completion nine years ago, and he could endorse what had been said with regard to their magnificence and success. The author of the paper had remarked, with reference to the Pennsylvania station, that, speaking architecturally, it had been a controversial question with American architects whether the use of an ancient motif like the baths of Caracalla was legitimate in such a case as this. He (Professor Adshead) remembered discussing this matter with several enthusiasts until late in the morning at the Harvard Club, and the opinion was by no means unanimous; but, personally, he was one of those who held very strongly in favour of sacrificing a good deal of what most people called utility in order to create an impression, and there was no doubt about it that the Pennsylvania station was a most impressive building. Its scale was magnificent, and, as the author of the paper had said, it was a much more simple building than the Grand Central. It had a great advantage over the railway stations which we had recently reconstructed in this country, in that it was on a magnificent and symmetrical site with a grand approach. Those who had not visited New York did not realise the great width and grand scale of the avenues there; and our English railway stations, improved though they were, suffered from the lack of a magnificent approach. With regard to the Pennsylvania station, probably one of the most interesting and successful parts of that erection was the concourse which, as had been shown on the screen, was a construction of steel. It was a very beautiful building in steel, and he would like to see engineers to use steel more architecturally, as had been done in America. The Grand Central Station, as the author of the paper had stated, was a very complex sta-

tion. It was essentially modern; but, although it had not the traditional qualities of the Pennsylvania station, he was not quite sure that it was not architecturally better.

Mr. W. R. Davidge seconded the vote of thanks. He said we were all very much interested in the works of our American cousins, particularly in these modern structures in which the engineer and architect had collaborated. The Pennsylvania station was practically a modern station put over a very deep tube railway. This made great difficulty with the levels, and the architect who had to deal with such a problem was entitled to sympathy. The whole of his efforts had been concentrated upon the great central concourse, and it was disappointing to leave that concourse and find the trains almost entirely in artificial illumination, and the platforms comparatively narrow; but this was not the fault of the architect but of circumstances. The weak point of the plan had been touched upon, namely, that the New Yorker did not, in fact, use the concourse at all, but preferred to make a short cut by the back way.

Mr. W. Woodward said the Americans were not satisfied to do anything unless it knocked everything European into a cocked hat. He thought these two railway stations were on far too large a scale.

Mr. Arthur Bartlett said these railway stations served 80 or 90 millions of people, and it was therefore appropriate that they should be on a very great scale. The Pennsylvania station was an extraordinarily beautiful one.

The Chairman said that his recollection of the Pennsylvania railway station was of going into a vast hall, and finding it practically empty. It struck him there was an immense waste of space.

The vote of thanks was heartily accorded, and Mr. Keen having briefly replied, this terminated the proceedings.

THE ARCHITECTS' BENEVOLENT SOCIETY.

The annual meeting of the Architects' Benevolent Society was held in the rooms of the Royal Institute of British Architects on Wednesday, May 12. Mr. J. W. Simpson, P.R.I.B.A., the president of the society, occupied the chair. Among those who were present were Sir Banister F. Fletcher, Mr. Henry Lovegrove, Mr. George Hubbard, Mr. Herbert Shepherd, Mr. Andrew T. Taylor, Mr. William Grellier, Mr. Sydney Perks, Mr. A. E. Kingwell, Mr. W. Hilton Nash (hon. treasurer), and Mr. Dircks (secretary).

The Secretary read the annual report, which stated that the Government Committee on the Prevention and Relief of Distress decided in July to discontinue the grants for the payment of salaries of the workers on the Civic Survey, and in view of this decision the Civic Survey Joint Committee found it necessary to bring the work to a close in October. During the existence of the surveys £13,800 was received from the Government Committee, and in addition to this amount £825 16s. 1d. was received for work undertaken for the Air Board and £39 6s. from other sources, making a total of £14,665 2s. 1d. Out of this sum £13,900 15s. 8d. was paid in salaries, while (apart from a balance in hand of £67 14s. 9d.) the remaining expenditure was incurred in essential expenses connected with the work. No expenses connected with the official administration of the scheme have been incurred by the society. Although the Government Committee have brought the work of the Civic Survey to a conclusion they have placed a grant at the disposal of the society for the further assistance of architects affected by the war. A special committee, entitled the Architects' War Relief Fund Committee, on the suggestion of the Architects' War Committee, has been formed to consider applications. The amounts placed by the Architects' War Committee at the disposal of the society have been administered both by the society and the Professional Employment Committee, and the sum of £4,492 6s. 2d. has been paid for subsidised work organised by that committee and in special grants. The sum of £273 11s. has been

granted in loans during the war. So far as the general funds of the society are concerned £1,042 has, during the past year, been distributed in grants to applicants, while £18 10s. has been paid in pensions. A legacy of £25 has been received from the executors of the late Mr. H. W. Lonsdale, an old subscriber; and among the donations the following amounts have been received: Mr. R. M. Lucas £12 12s., Tylers and Bricklayers Co. £10 10s., Mr. John Keppie £1 10s., Miss B. A. Charles (general fund) £5 ditto (war fund) £20, Sir Banister Fletcher £5 5s., Mr. Herbert Shepherd £5 5s., Mr. Rees Phillips £5 5s., Mr. Es. Morley £4 4s., Mr. H. A. Crouch £3 3s., Mr. A. B. Burelgh £3 3s.

The President, in moving the adoption of the report, announced that it was the seventieth annual report of the society. It was founded in 1850, before most of those present came into the world, and it was proper on that occasion that they acknowledge with gratitude the benevolent foresight of their forbears by which those connected with the profession of architecture have so greatly benefited. The names should not be forgotten, and he asked all to rise while he recalled them, as a tribute to their honoured memory: Patrons, Sir Robert Smirke, R.A., and George Stanley Repton, Esq.; president, Sydney Smirke, Esq., A.R.A.; trustees, Charles Barry, Esq., Charles Robert Cockerell, Esq., R.A., and Philip Hardwick, Esq., R.A.; treasurer, William Tite, Esq., F.R.S.; council, William Barnes, Esq., Francis Edwards, Esq., Benjamin Ferrey, Esq., William Grellier, Esq., George Gutch, Esq., Edward Charles Hakewill, Esq., Edward T. Anson, Esq., William S. Inman, Esq., George Mair, Esq., David Mocatta, Esq., James Pennethorne, Esq., Ambrose Poynter, Esq., Anthony Salvin, Esq., George Smith, Esq., and T. H. Wyatt, Esq.

They have passed away, but the great and good work they set afoot still lives and flourishes. Their first annual report was made in 1851.

The Architects' Benevolent Society was then born two years before Napoleon III. came to the throne of France, and but thirteen years after the Royal Institute of British Architects received its Charter from William IV. Architects were not long in perceiving that the strengthening of their privileges by incorporation laid upon them responsibility in regards their weaker brethren; the offspring is consequently almost as venerable as its parent. For seventy years the society has been the only philanthropic organisation which deals solely with architects, their dependents, and their widows and orphans who are left with insufficient means of livelihood. There is no longer need for the special work the society carried on during the war, but the effects of that dreadful period it must for long feel and strive to relieve. For this, increased funds are urgently required. As is well known, the society's functions are carried on in corded relation with the Artists' General Benevolent Institution, the Professional Classes Relief Council, and the National Relief fund. To the Royal Institute of British Architects the society is under the deepest obligation. There were innumerable adages by which the president said he could reinforce his appeal; they had grown a little rusty by age; constant repetition had somewhat dulled their edge, and it was useless as well as immoral to flatter a willing horse. But "He gives twice who gives quickly" and "Never put off till tomorrow what you can do to-day" (the latter had especial point in view of the new Budget) are maxims all might well bear in mind when they thought of the Architects' Benevolent Society.

On the motion of Mr. Henry Lovegrove seconded by Mr. George Hubbard, the Council for the ensuing year of office was elected as follows:—President, The President of the R.I.B.A.; vice-president, Mr. Reginald St. A. Roumieu; ordinary members, Mr. Sydney Perks, Mr. Arthur Crow, Mr. George Hubbard, Mr. T. E. Collett, Sir Banister F. Fletcher, Mr. W. Campbell Jones, Mr. E. C. P. Monson, Mr. Herbe-

Shepherd, Mr. Stanley Hamp, Mr. Saxon Snell, Mr. W. Henry White, Mr. William Woodward, Mr. E. J. Sadgrove (nominated by the Society of Architects), and Mr. Maurice E. Webb (nominated by the Architectural Association).

A cordial vote of thanks was passed to Mr. W. Hilton Nash for his services as hon. treasurer, and he was elected for the ensuing year of office. A similar vote of thanks was also accorded to Sir Charles Nicholson, who was unfortunately unable to be present. On the motion of Mr. W. Hilton Nash a vote of thanks was passed to the retiring hon. auditors, Mr. W. Henry White and Mr. C. H. Brodie; and on the motion of the same gentleman, Mr. Henry Lovegrove and Mr. C. H. Brodie were elected hon. auditors for the ensuing year of office. On the motion of Mr. Hilton Nash a vote of congratulation was passed to Sir Aston Webb, one of the senior trustees of the society, on his election to the Presidency of the Royal Academy. On the motion of Sir Banister Fletcher, a vote of thanks was passed to the president for presiding.

THE SOCIETY OF ARCHITECTS.

NOTES FROM THE MINUTES.

Articles of Association.—The alterations to the Articles of Association have been confirmed, and applications are now being received for admission to the several classes of membership within the society.

Ministry of Labour Consultative Committees.—Mr. F. Rhodes, of Leeds, has been appointed as the society's representative on the Consultative Committee of the Ministry of Labour Appointments Department in place of Mr. W. S. Braithwaite, who is unable to continue the work owing to pressure of other business.

National Building Code.—Following the Conference at Olympia with representatives of the National Federation of Building Trades Employers, a committee of the society has been formed to consider the whole question of a form of building contract, and to enter into negotiations with the National Federation of Building Trades Employers in regard to the proposed National Building Code.

Building Combines.—Several members of the society have given evidence before a Sub-Committee of the Central Committee formed under the Board of Trade to consider the Profiteering Act of 1919, and to investigate prices, etc., in connection with the stone, brick and claywork trade.

Membership Examination.—None of the candidates who sat for the Membership Examination in April were able to satisfy the examiners.

Victory Scholarship.—Twenty-five candidates presented themselves for the first preliminary 12-hour "en loge" competition, held at the society's headquarters on May 1. Considerable interest attaches to this competition as being the first of its kind ever held in Great Britain. The assessors were the jury of the Royal Academy Ateliers, and they have selected ten candidates to sit for the final "en loge" competition on June 5.

Students' Competitions.—The report of the assessors in the Travelling Studentship Competition shows that the work submitted was not of a sufficiently high standard to justify any award being made. Under these circumstances the prize of £25 will be carried forward and added to the Travelling Studentship prize for 1921. There were no entries for the Quarterly Competition for an Essay on "Modern Methods of Building Construction."

Building Trades Exhibition.—A report of the proceedings appears in the May Journal. It is hoped that on another occasion the programme will be of a more comprehensive and better character, and the society is already in negotiation with the directors in regard to the matter.

Architectural Association School of Architecture.—The Council have written to the President of the Architectural Association heartily supporting the educational work of the A.A. and expressing the view that architectural education generally in Great Britain should be controlled by the architectural profession and not by other bodies.

The society has also expressed its sympathy with the proposal to raise a fund for the architectural schools as a memorial to architects who fell in the recent war.

City Churches.—The Council have had before them the report of the Commissioners, in which a number of City churches are scheduled for demolition. It was recalled that in 1903, when the society's opinion was asked as to the proposal to demolish All Hallows, Lombard Street, the society made the suggestion that if its removal was inevitable the church should be erected on some other site. An interesting sequel was that an offer was made through the society of a suitable site near London, together with a sum of money towards the re-erection of the building and an annual sum towards its upkeep. The Council has issued the strongest possible protest against any interference with the City churches, and would strenuously oppose any proposition for their destruction, and if their removal becomes inevitable the society is still of the opinion that they should be taken down and re-erected elsewhere.

Empire Timber Exhibition, 1920.—On the invitation of the Controller-General of the Department of Overseas Trade, the society has nominated a representative to serve on the Advisory Committee. The society's representative will be Sir Charles T. Ruthen, Vice-President of the society.

Architects' and Surveyors' Assistants' Professional Union.—The Council have had under consideration resolutions passed by the Union and agreed to by the Assistants' Welfare Committee on the subject of a minimum wage for architects' and surveyors' assistants, and in regard to a special scheme for insurance against unemployment for architects' and surveyors' assistants, on the lines of the Architects' and Surveyors' Approved Health Insurance Society. The Council is not in agreement with some of the details of the proposal for a minimum wage, and the matter is receiving further consideration, but they agree in principle with the proposal to formulate a special unemployment scheme for the profession.

A National Society for Testing Materials.—The society's representative on this committee reports that owing to certain difficulties, financial and otherwise, the various bodies represented have decided to defer for the present the establishment of a National Society for Testing Materials. In the meantime, a joint committee will be formed by the societies interested to go into the work already being done by other bodies in research and testing with a view to preventing overlapping.

Royal Sanitary Institute Congress, Birmingham.—The society will be officially represented at the Birmingham Congress in July next by Mr. Alfred Long, of West Bromwich.

First Atelier of Architecture.—Mr. de Soissons, who was Sous Patron of the First Atelier of Architecture in succession to Mr. Chaurès, has since been obliged to relinquish the work owing to his having received another appointment. Pending a permanent successor, Mr. L. H. Bucknell, A.R.I.B.A., has kindly consented to act as Sous Patron. The atelier, which is now one of the R.A. Ateliers, is open, and for the present candidates possessing certain qualifications can obtain entry to it without examination.

Victory Scholarship Fund.—There is a considerable sum still to be raised in order to provide a capital sum sufficient to produce £100 per annum to provide a prize. Members who have not yet subscribed are reminded that donations of any amount, small or large, will be gratefully received. It is thought that there must be many members who would like to associate themselves with this proposal, and who have not yet signified their intention to do so.

Society's Staff.—The Council have received and accepted with great regret the resignation of Mr. W. E. Wanner, who has been in the employment of the society for upwards of sixteen years, during the latter part of which time he acted as assistant secretary. Mr. Wanner has obtained another appointment which will give him a wider scope for his abilities, and the Council feel

that while the society will be the loser, Mr. Wanner is to be heartily congratulated on his success.

THE DEAN OF WORCESTER'S £500 BUNGALOWS.

"I believe this type of house is the type for the future," said the Dean of Worcester last week, on the occasion of the completion of one of the four bungalows in Lansdowne Road.

"No upstairs," was the general comment of visitors, three bedrooms on the ground floor, large and well-lighted living-room, bath, with hot and cold supply, and kitchen with gas boiler. The ceilings are of asbestos sheeting, whitened, and there are oak beams and buff coloured walls.

The Dean (Dr. Moore Ede) and the architect (Major Vernon Rowe) did not set out to build an "ideal" house, but to see what could be done in the way of building with a sum of £500. Preaching, said the Dean, without practice, was not of much value. He had tried to see if houses could not be built for a much smaller sum than that generally quoted. The builder would not receive any more than £500, which was suggested as the possible price. People might say that the figures were "faked," but the builder had undertaken to erect two more, with improvements and slightly larger, at a cost, in spite of wages being advanced, which would not be above £550. The Dean thought that the country would very largely give up the two and three story type of house. He was told that some members of the Housing Committee called the houses "the Dean's cowsheds." He believed that the citizens would have been better pleased if the Housing Committee had put up a few "cowsheds" themselves. Houses constructed such as these were a really sound financial proposition, so long as the Government continued the subsidy. He would make the Corporation a sporting offer. If they would hand him over an acre of ground on one of the sites at cost price—apart from the cost of road and main sewer—he would undertake to build ten houses almost immediately; no housing bonds would be required to finance them, and there would be no cost to the rates.

Dr. Simmons said he would bring the offer before the Housing Committee, and, having mentioned that the Northwick site was appropriated, the Dean made the offer applicable to the Bransford Road site.

Major Rowe said the cost of the bungalows was no "freak." Outside the city boundary a pair of houses was being built for £1,200, and at Offenham £1,280.

The Dean announced that at the garden suburb a wooden bungalow would shortly be erected, with electrical heating, lighting, and cooking appliances, and walls of pisé-de-terre.

NATIONAL BOARD OF CONCILIATION FOR THE BUILDING TRADES.

In accordance with the following resolution of the Joint Meeting of Executive Councils of the Employers' and Operatives' Federations held on May 6:—

"That this Conference having undertaken the responsibility of drawing up a scheme for the settlement of wages and Conditions in the building industry on a national basis hereby expresses its profound conviction that in order to bridge over immediate difficulties incidental to the present area agreements the National Conciliation Board should meet on Wednesday next and review the conditions."

this Board invited representatives of such regional areas as have area agreements in existence to come before it to give evidence as to the conditions in their respective areas. Representatives attended from eight areas on the operatives' side, but on the employers' side only from the North Western, Yorkshire, South Western, South Wales, London and the Southern Counties; in the case of the Midland area a letter was put in stating the position.

In the case of the London area the employers and operatives had considered the position caused by a demand for an advance and had at the suggestion of the former

agreed to refer the matter to the decision of this Board.

The employers from the other areas protested in the strongest manner against this Board giving a decision to raise wages in their areas, and manifested extreme reluctance to give any evidence upon the ground that to do so would be out of order and unconstitutional, but eventually consented to express their personal views as to the situation in their areas under protest, as owing to the short notice it had not been practicable to ascertain the views of the various regional federations, and they had, therefore, no authority to represent them.

Evidence was then taken at considerable length, from which it became apparent that, although there might be said to be unrest in each of the areas represented at the hearing, it varied in acuteness a good deal, being more marked in the great industrial areas than elsewhere.

In regard to the southern counties area the rates of which had only been awarded by this Board on April 13, when a substantial advance was given, the Board decided that there is no immediate need for a further award.

In regard to the other areas, except London, the Board decided that in view of the changed circumstances which have taken place since the awards under which those areas are working were given, and the fact that the main reason why in awards given by this Board they were fixed to remain in force for periods expiring later in the year was to carry over the change of working hours on May 1, and did not contemplate the new circumstances which are causing the unrest which has brought about the present review of those decisions, the Board therefore decided:—

"That this Board cannot see its way to give an immediate decision covering all areas, but requests the Area Councils (except London) to give during the week ending May 22 serious consideration to existing demands with a view to settlement between now and June 1."

As regards London the Board decided as follows:—

"The advance to date from May 29 to be 3½d. per hour for all skilled trades (including painters), and 4d. for labourers, and that all existing notices be withdrawn."

A. G. WHITE,
A. G. CAMERON,
Joint Secretaries.

LONDON BUILDING TRADE SETTLEMENT.

On May 13 the Conciliation Board, by agreement, fixed the rates for the building trade in London as follows:—

Mechanics, 2s. 4d. an hour.
Painters, 2s. 3d. an hour.
Labourers, 2s. 1d. an hour.

The new rates represent an increase of fourpence per hour for all labourers in the Metropolitan area, which covers fifteen miles radius from Charing Cross, and threepence halfpenny an hour advance for all mechanics. The increased earnings will start on the 29th inst., and the first payment under the new agreement will be made on June 5.

Maryport Council decided to let one field, acquired as a building site, for grazing, and to put another under the plough, in order to meet the interest on the capital outlay, on Tuesday. Mr. Hardy said he had expected the schemes to be completed this year, but they could not go forward because of the dilatoriness of the Ministry of Health.

The Institution of Water Engineers will hold its 25th summer general meeting in Birmingham on June 10 and the two following days. Among the papers to be read are one by Professor W. S. Boulton on "The Water Resources of the Birmingham District" and one by Mr. E. Antony Lees on "The Birmingham Scale of Charges for Water." Mr. Fred. J. Dixon, chief engineer to the South Staffordshire Waterworks Company, will be installed as president, and will deliver the presidential address. Among the excursions arranged are visits to the South Staffordshire waterworks and to the Whitnash waterworks of the Birmingham Corporation.

PROFESSIONAL AND TRADE SOCIETIES.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.—At the request of the council, Mr. Herbert T. Buckland, the president, has sent the following letter to the Lord Mayor:—"At a council meeting of the Birmingham Architectural Association, held yesterday, the dispute between the Birmingham Housing Committee and the Federated Builders was under discussion, and a general opinion was expressed that in the interests of the ratepayers it is desirable that an inquiry should be held with a view to arriving at some conclusion with regard to the conflicting statements made by the parties to the dispute. I see from the Press that a similar suggestion has been made by the Builders Trades Employers' Association, and that the Ministry of Health is suggested as an unbiased authority to whom the matter might be referred. As it is not unlikely the Ministry of Health might take some time to institute an inquiry, may I offer the suggestion that a local court of inquiry might be formed, consisting of, say, a barrister, an architect, a builder, and a member of the city council? The contractors in their letter have expressed a desire for a public investigation, so that it only remains for the Housing Committee to come forward in a like spirit. To this end I suggest that authority be given to the court of inquiry to call for any member or official of the Housing Committee to attend and give evidence in defence of the statements made by their chairman from time to time, and so afford him what I should imagine would be a welcome opportunity of justifying his position." At a subsequent meeting of the Housing Committee, after some silly talk by one member about "not being dictated to" by builders, or anyone on their behalf, it was resolved to hold a conference on Wednesday last.

THE LONDON SOCIETY.—The members of the London Society continued their after-dinner discussions on "London as I should like to see it" at the Royal Adelaide Gallery, Gatti's Restaurant, on May 13. The discussion on this occasion had special reference to the proposed demolition of 19 city churches. Sir Reginald Blomfield presided, and those present included Miss Lena Ashwell, Mrs. Herbert W. Wills, Sir Mathew Nathan, Mr. Arthur Rackham, Professor Beresford Pite, Sir Ambrose Poynter, Sir John Wayland, Dr. Sunderland, Mr. P. W. Lowell, Mr. R. W. Granville Smith, Dr. Stephen Miall, and Mr. Carmichael Thomas. The Chairman, referring to the city churches, said that on the face of it the proposal was a dangerous precedent. If it was once admitted that a great corporate body like the Church of England was entitled to part with its property to meet the need of the present generation, there was no logical reason why this process should not ultimately be extended to St. Paul's Cathedral and Westminster Abbey. This appeared to be the view of the chairman of the Commission, Lord Phillimore, who announced in the *Times* that morning that the question of how many churches should be removed was "one of degree and detail." These churches had for generations won the admiration and affection of all educated people as masterpieces of their kind. Yet it had not been thought necessary to call in the opinion of any artist. No architect or historian of architecture had been consulted. The Commission seemed to have grasped two out of a very large group of factors—first, that money was wanted, and second, that it could be raised by the sale of these churches, which had a considerable financial value. A special meeting of the Council of the Society would be called to consider the full report of the Commission as soon as it was published. They were also arranging a lecture on the nineteen threatened churches, to which representatives of societies interested would be invited. Professor Pite said that he revolted with all his soul against the proposal to introduce skyscrapers to London. Once they appreciated the fact that London was the shore of the Thames they would refrain from impracticable ideas of *piques* and avenues. London would always be spread around the widening curves of the river. No other city had a boulevard to com-

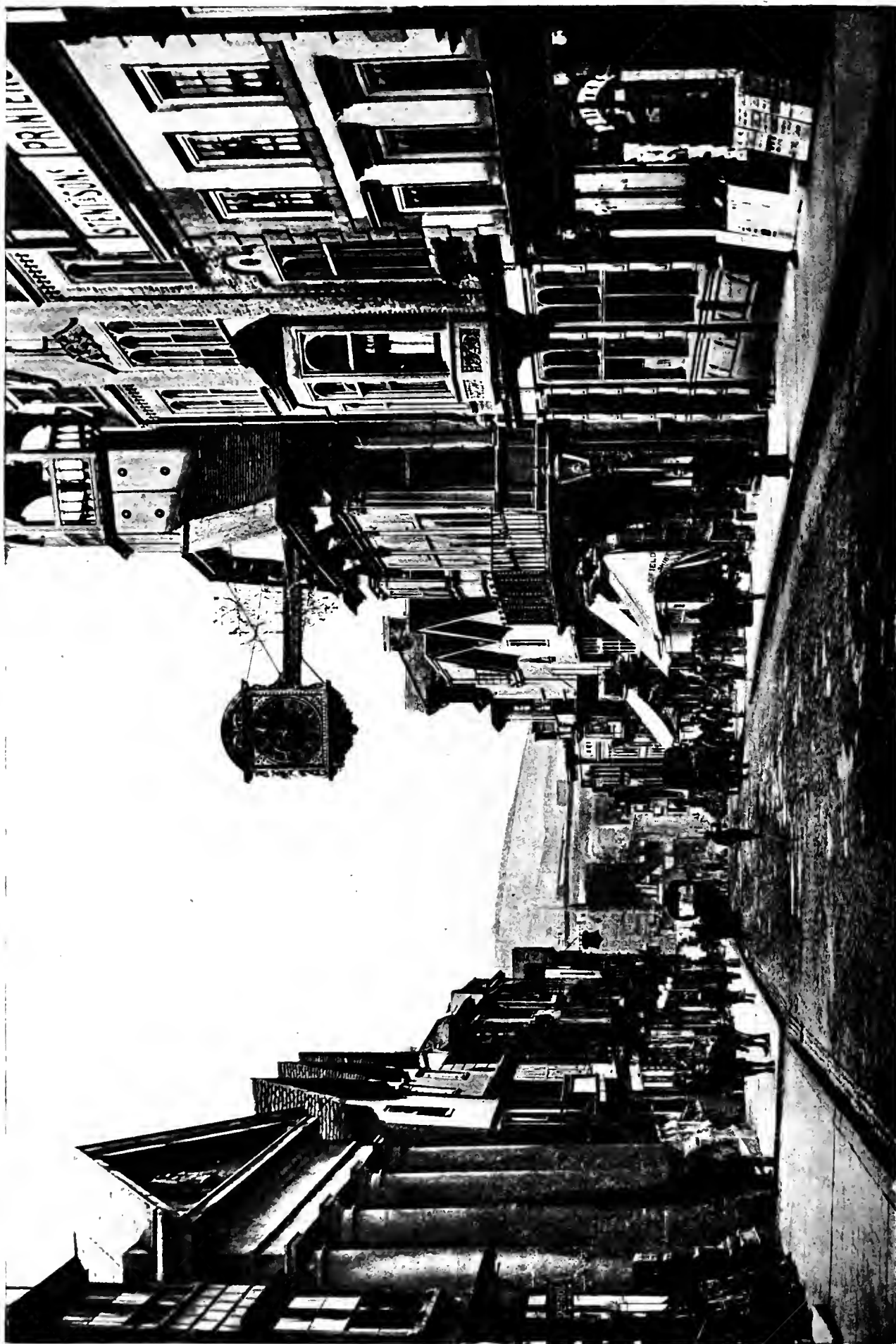
pare with the Embankment. They needed to appreciate the fact that London was a city of extraordinary beauty, owing to the nature of its site.

MANCHESTER SOCIETY OF ARCHITECTS.—The following is the list of members of Council and Standing Committee elected to serve for 1920-21:—President, A. W. Hennings, F.R.I.B.A.; Senior Vice-President, P. S. Worthington, M.A., Litt.D., F.R.I.B.A.; Junior Vice-President, W. S. Beaumont, A.R.I.B.A.; Hon. Secretary and Treasurer, Francis Jones, F.R.I.B.A.; Assistant Hon. Secretary, H. Q. Farmer, Lic., R.I.B.A.; Members of Council.—Fellows.—A. C. Dickie, M.A., F.R.I.B.A., F. B. Dunkerley, F.R.I.B.A., J. H. Gibbons, F.R.I.B.A., W. C. Hardisty, F.R.I.B.A., E. Hewitt, F.R.I.B.A., P. Ogden, F.R.I.B.A., J. H. Sellers, I. Taylor, F.R.I.B.A., E. Wood, A.R.I.B.A. Associates.—J. S. Beaumont, B.A., J. H. Worthington, M.A., A.R.I.B.A., W. C. Young, A.R.I.B.A. Auditors.—H. H. Brown, F.R.I.B.A., J. D. Mould, F.R.I.B.A. The following are ex-officio members of all Committees.—A. W. Hennings, F.R.I.B.A., P. S. Worthington, M.A., Litt.D., F.R.I.B.A., W. S. Beaumont, A.R.I.B.A., Francis Jones, F.R.I.B.A., H. Q. Farmer, Lic., R.I.B.A. Competitions Committee.—Chairman, A. W. Hennings, F.R.I.B.A.; Hon. Secretary, F. Jones, F.R.I.B.A. Fellows.—C. G. Agate, Lic., R.I.B.A., J. H. France, Lic., R.I.B.A., J. Holt, F.R.I.B.A., I. Taylor, F.R.I.B.A., P. D. Lodge, Lic., R.I.B.A., John Swarbrick, F.R.I.B.A., J. H. Woodhouse, F.R.I.B.A. Associates.—P. Cummings, A.R.I.B.A., Percy Howard, A.R.I.B.A. Education Committee.—Chairman, P. S. Worthington, M.A., Litt.D., F.R.I.B.A., Hon. Secretary, J. H. Worthington, M.A., A.R.I.B.A., Secretary for Summer visits, A. C. Dickie, M.A., F.R.I.B.A. Fellows.—F. B. Dunkerley, F.R.I.B.A., J. T. Halliday, A.R.I.B.A., J. H. Sellers, E. Wood, A.R.I.B.A. Associates.—J. B. F. Cowper, A.R.I.B.A., H. A. Dalrymple, A.R.I.B.A., W. C. Young, A.R.I.B.A. House Committee.—Chairman, E. Hewitt, F.R.I.B.A., Hon. Secretary, G. Sanville, A.R.I.B.A. Fellows.—J. H. Evans, Lic., R.I.B.A., P. Hesketh, A.R.I.B.A., S. Moss, A.R.I.B.A., I. Taylor, F.R.I.B.A., J. H. Woodhouse, F.R.I.B.A., C. A. Hindle, A.R.I.B.A. Associates.—T. M. Foden, W. A. Johnson, H. C. Powell, A.R.I.B.A. Library Committee.—Chairman, J. H. Sellers, Hon. Secretary, D. C. Young, A.R.I.B.A. Fellows.—A. C. Dickie, M.A., F.R.I.B.A., F. B. Dunkerley, F.R.I.B.A., J. A. M. Hunter, I. Taylor, F.R.I.B.A. Associates.—J. S. Beaumont, B.A., J. H. Worthington, M.A., A.R.I.B.A. Practice Committee.—Chairman, P. Ogden, F.R.I.B.A., Hon. Secretary, A. J. Murgatroyd, Fellows.—J. W. Beaumont, F.R.I.B.A., J. B. Gass, F.R.I.B.A., J. A. M. Hunter, P. D. Lodge, Lic., R.I.B.A., I. Taylor, F.R.I.B.A., J. H. France, Lic., R.I.B.A.

Sir Aurel Stein, of the Archaeological Survey of India, who has acquired so great a reputation as an explorer by his expeditions into Central Asia, has arrived home on leave, and expects to be here until October. He is at present residing at Oxford, and is busily engaged on the proofs of the great work embodying his detailed report on the scientific results of his extensive journeys.

Mr. Harker Charles Crummock, Assoc.M. Inst.C.E., borough engineer of Hartlepool from 1888 to 1911, died on Monday week at West Hartlepool. During the war Mr. Crummock was engaged in connection with the erection of the Canadian military hospital at Bushey Park. Born at York in 1858, he served his articles under the city engineer there, and up to his appointment at Hartlepool was assistant engineer at York.

The new offices of the Metropolitan Water Board in Rosebery Avenue will be formally opened on May 27 by the Chairman (Mr. E. B. Barnard). The structure has been built on the site of what is known as New River Head, where 300 years ago water from the New River was first poured into the Round Pond. Mr. Austen Hall is the architect, and the building, which has cost nearly £300,000, will provide ample accommodation for the central office staff. At present and for the last two years the offices of the Board have been at Arncliffe's Hotel, South Place, E.C.



HIGH STREET, GUILDFORD, SURREY.
(Showing Eastern Boundary of Onslow Village Site in distance.)

391-4



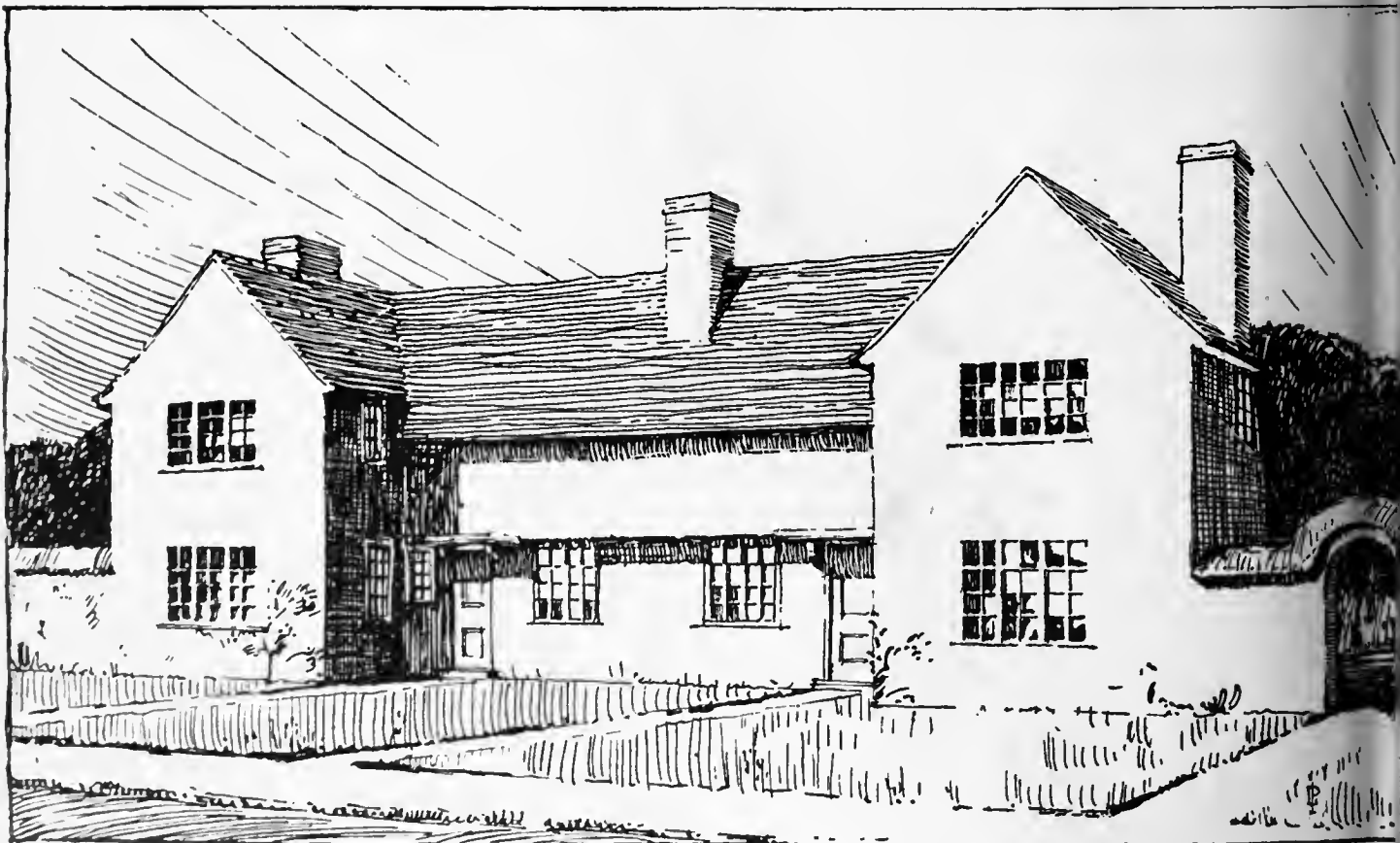
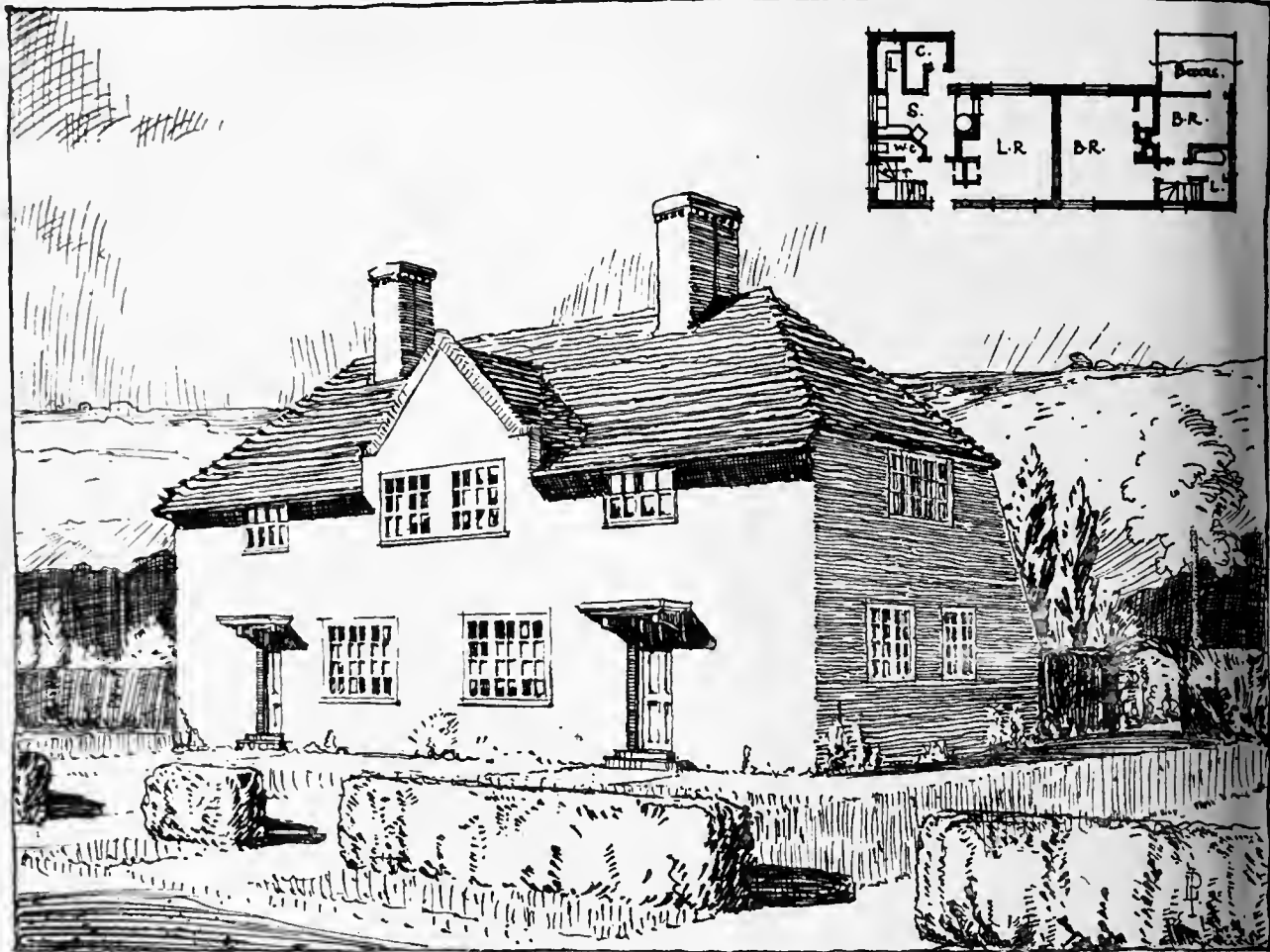
CHAPEL OF ALL SOULS, ST. STEPHEN'S
Messrs. WALTER TAPPER, F.R.I.B.A., a

MAY 21, 1920.



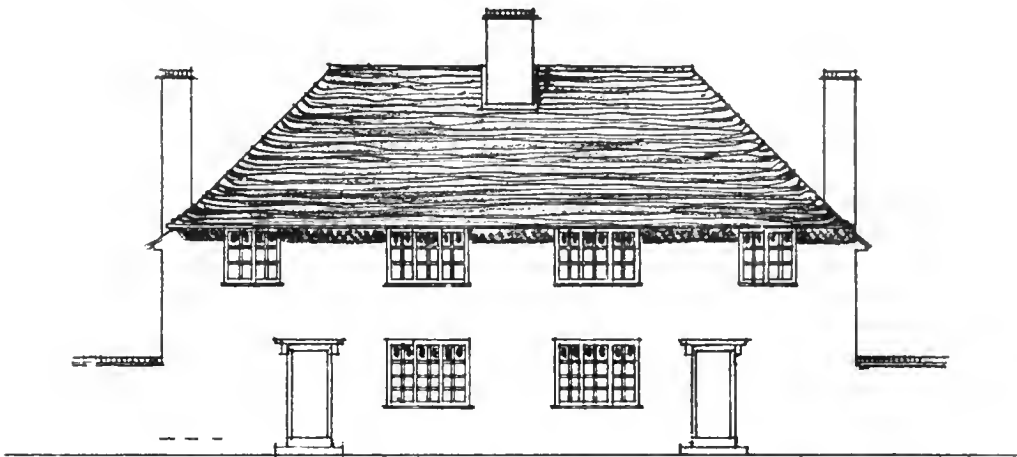
CHURCH, GLOUCESTER ROAD, LONDON, S.W.
MICHAEL J. TAPPER, A.R.I.B.A., Architects.

395-398.

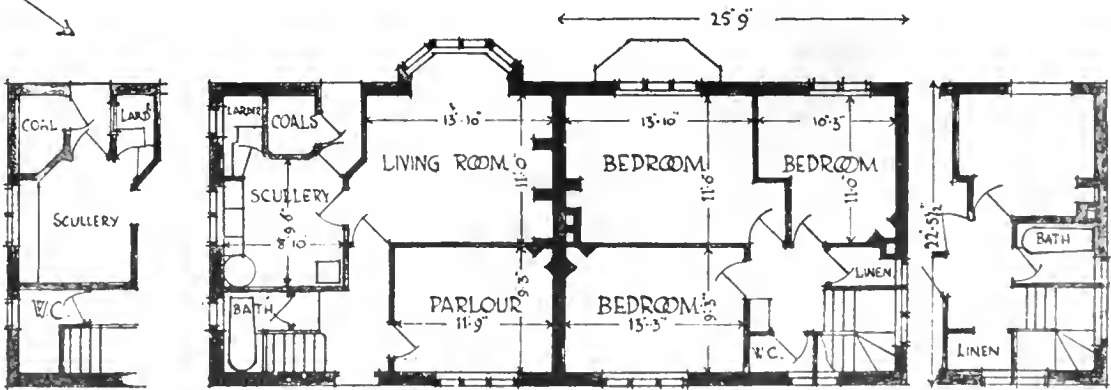




BACK ELEVATION



FRONT ELEVATION

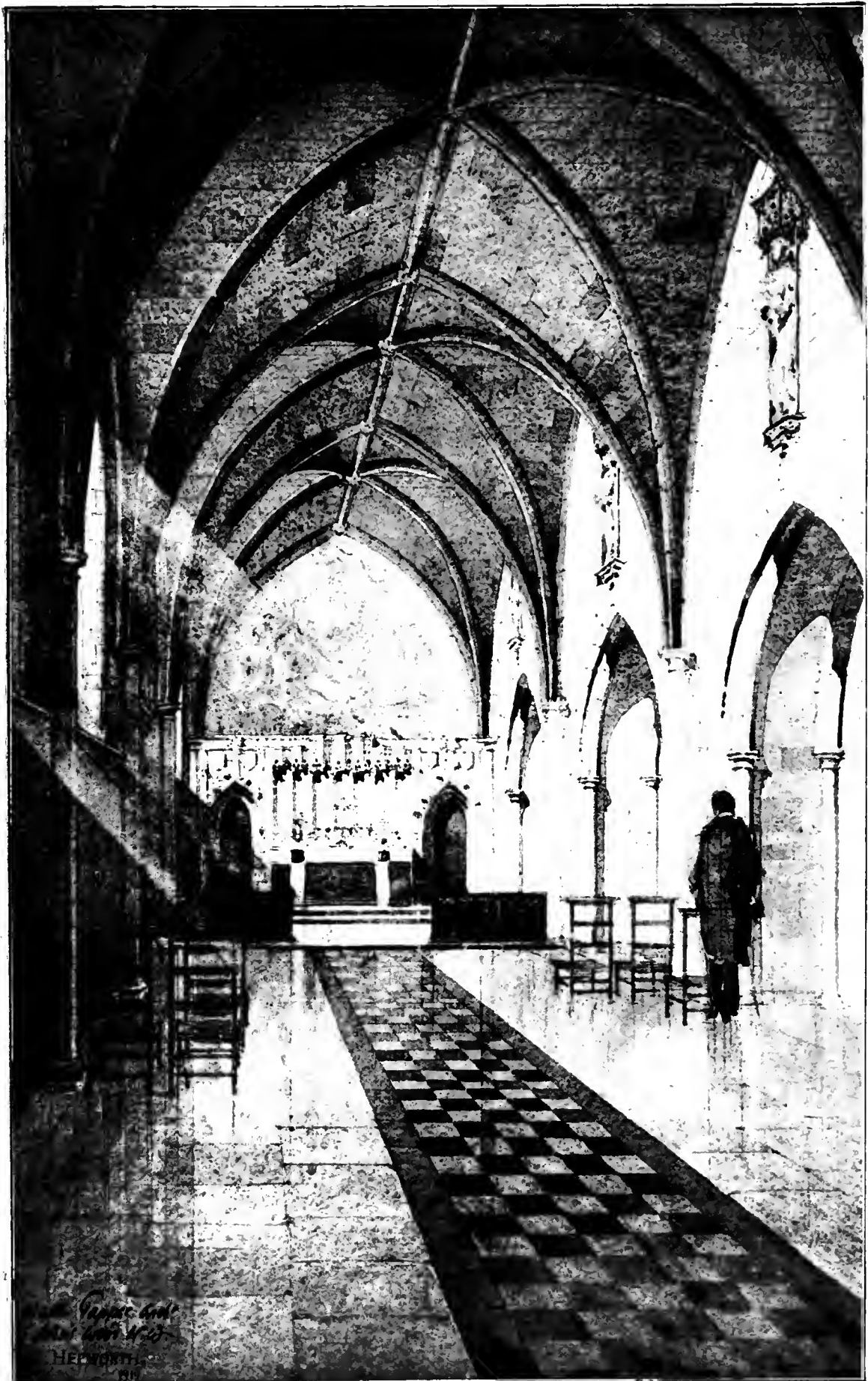


ALTERNATIVE WITH W.C. DOWNSTAIRS
AND SHELTERED LARDER WINDOW

GROUND FLOOR PLAN FIRST FLOOR

ALTERNATIVE WITH BATHROOM
UPSTAIRS

THE BUILDING NEWS, MAY 21, 1920.



CHAPEL OF ALL SOULS, ST. STEPHEN'S, GLOUCESTER ROAD, S.W.
Messrs. WALTER TAPPER, F.R.I.B.A., and M. J. TAPPER, A.R.I.B.A., Architects.

Our Illustrations.

CHAPEL OF ALL SOULS, ST. STEPHEN'S CHURCH, GLOUCESTER ROAD, KENSINGTON, S.W.

This addition to this well-known London church is to occupy a vacant site on the north side of the building, and set out to the street frontage line as shown in the perspective view. The altar will be at the eastern end of the chapel. The chapel is groined throughout with windows on geometrical lines rather "late" in character, and quite English in style. Both pictures, drawn by Mr. P. Hepworth, are well hung in the present exhibition of the Royal Academy. Messrs. Walter J. Tapper, F.R.I.B.A., and Michael J. Tapper, A.R.I.B.A., of St. John's Wood, are the architects.

ONSLOW VILLAGE, GUILDFORD, SURREY.

In the present exhibition of the Royal Academy some of the houses in "the Close" of this projected garden city are shown by the architects, Messrs. Knapp-Fisher, Powell, and Russell, of Westminster. Three of the most typical examples among the first fifty to be erected are illustrated to-day. A view of the High Street at Guildford is likewise given because the photograph furnishes a good idea of the relative location of the Manor and Wilderness Estates' eastern extremity appearing in the distance at the end of the vista. The Onslow village thus to be developed comprises 646 acres of rolling upland, with extensive views from the slopes of the "Hog's Back," 450 ft. above the sea-level, and about a mile from Guildford Station. It is an ideal situation, enriched by good timber, which will be conserved in the layout as planned by the architects, each tenant to have an allotment close by his individual holding. The society's rules stipulate that every tenant member must hold not less than seventy-five shares in the undertaking, and the average allocation of the dwellings will be five to the acre. Various businesses of wholesale and retail character, as well as social, recreative, and institutional enterprises are contemplated, but no intoxicating drink may be sold on any of the society's premises. When a dividend on the share capital is available, the rate of interest is not to exceed 6 per cent. per annum; 10 per cent. on the profits will be devoted to a common fund for social and educational purposes, and any balance appropriated for the benefit of the tenants generally. The exteriors of the dwellings will be varied in design by the use of simple brickwork for some and rough-casted elevations for others. The roofs of all are to be tiled. Parlours are provided in most of the houses. Part of the village will be devoted to bungalows. The larger perspective shows a pair of semi-detached cottages with three bedrooms and a parlour. The smaller view has a plan in the margin. The accommodation consists of two bedrooms, a living-room, and a kitchen or scullery. The geometrical detail shows a pair of houses in "The Crossways."

Mr. John Seagram Richardson, senior partner of the firm of Debenham, Tewson, and Chinnocks, was unanimously elected president of the Auctioneers' and Estate Agents' Institute last Friday.

Last Monday night a deputation, headed by the Mayor of Plymouth, waited on Dr. Addison, and as the result of definite promises of assistance from the Ministry agreed to propose to the Council that five hundred houses should be begun forthwith, and a further "instalment," subject to financial arrangements, at a later date.

THE ROME SCHOLARSHIP IN ARCHITECTURE.

His Majesty's Commissioners for the British School at Rome have awarded, on the recommendation of the Faculty of Architecture, who acted as judges, the Rome Scholarship in Architecture for 1920 to Mr. F. O. Lawrence, B.Arch., Liverpool, A.R.I.B.A. The second award has been made to Mr. W. Dougill, A.R.I.B.A., and the third to Messrs. E. R. Arthur and A. Koerner. Of these, Mr. Lawrence is a graduate of the Liverpool University School of Architecture, and Mr. Dougill and Mr. Arthur are undergraduates of the school. Mr. Koerner was trained in Paris.

The Rome Faculty of Architecture, which made the awards, consists of the following architects:—Sir Reginald Blomfield, R.A. (chairman), Sir Aston Webb, P.R.A., Sir E. Lutyens, A.R.A., Sir R. Lorimer, A.R.A., J. W. Simpson, P.R.I.B.A., Ernest Newton, R.A., Professor Lethaby, and Professor Reilly, the last member standing down from the judging, as Liverpool students were in the final round.

Mr. Lawrence, the present winner, entered the Liverpool University School of Architecture in 1910, and took the five years' course for the degree in architecture (B.Arch.), graduating in 1915. He then entered the Army and served with the Royal Engineers for four years in France, Egypt, and Palestine, and has recently been demobilised. Before enlisting he was for a time in the office of Messrs. Briggs and Thornely, of Liverpool, with whom he is at present engaged.

Mr. Dougill, A.R.I.B.A., came from Yorkshire, and Mr. Arthur from New Zealand. It is of interest to add that Mr. H. C. Bradshaw, the first Rome scholar in architecture, has now been appointed honorary secretary to the Architectural Faculty of the British School at Rome.

In our own review of the designs submitted on page 131 of our issue of February 20 last we said that Mr. Lawrence's neo-Grec design was adroitly delineated, presenting a much more dignified layout than the other plans, and commented on the merits of the schemes of Mr. W. Dougill and Mr. E. R. Arthur.

Dr. Morgan Watkin, who has been appointed Professor of French Language and French Literature at the South Wales University College, began life as a stonemason.

Visions of a Greater Nottingham have been rudely removed, for a communication has been received by the town clerk from the Ministry of Health, announcing that the corporation's application to Parliament for extended boundaries cannot at present be acceded to.

The Corporation of the City of London are applying to the Government further to extend for a year from next August the exercise of the powers for the compulsory purchase of scheduled lands within the City and in Southwark, which were required for the erection of the proposed "St. Paul's Bridge" with its approaches. The original Act was passed in 1911.

The three Sectional Committees appointed under the Profiteering Act to investigate the prices at all stages of timber, stone, bricks and clay ware, cement and mortar, have practically completed their inquiries, and their reports will be presented shortly. The draft report of the Sub-Committee on Timber was considered on May 3, when it was decided to call further evidence with regard to the wood used for housing. A further meeting has been held since, and a fresh draft prepared.

At the Grantham Guardians' meeting on Monday a protest, signed by a number of local firms of painters and decorators, against a contract being given to a certain firm for painting portions of the workhouse, was read. The grounds of protest were that the firm did not employ tradesmen, but only youths, and they did not pay the town's rate of wages.—The Clerk said the Guardians advertised for tenders, and only two were sent in. The firms making the protest took no notice of the advertisement except one, who applied for a form, but went no further.—The Guardians decided to place the protest on the table.

THE STATUS OF AUCTIONEERS.

The status of auctioneers was considered on May 13 at the annual meeting of the Auctioneers' and Estate Agents' Institute, held, Mr. W. Waite Sanderson, president, in the chair, at the house of the Institute in Russell Square. Late last year it was decided to close the door to membership except by examination, and a new syllabus for this ordeal in March, 1922, has been prepared. After that the application for a Royal Charter will be pressed, but, on Sir John Simon's advice, this step is being postponed as inopportune now. A feature of the meeting was a paper by Mr. E. H. Blake, the new secretary, recording the principal events in the history of the Institute since its foundation.

The President moved the adoption of the report. The steady return to normal conditions after the war had led to an increase in the number of applications for membership, 139 having been elected during the year, against 134 in the preceding twelve months. Of sixty members who had died twenty had given their lives in the service of their King and country. A balance of £479 remained after meeting the expenditure of the year, and the balance to benevolent fund account had increased by £595 to £5,925. In the first few weeks of the present year the Institute's branches had increased from fifteen to twenty-three, and the whole of England and Wales was now covered by branches. It was much desired, said Mr. Sanderson, to set up a fund to erect or purchase a new home to meet the growing need of the Institute for accommodation. The new articles of association provided for a more difficult entrance examination, and he believed all the members would approve that course. As to the Royal Charter, there were more important things, and registration would have a much greater effect on the well-being of the Institute.

Mr. B. Simons seconded the motion, and it was carried unanimously.

ROYAL CHARTER AND REGISTRATION.

Mr. E. H. Blake, in his paper, emphasised the need for large premises for the Institute. Some years ago the Council was very active in promoting an application for a Royal Charter, but there was good reason to believe that this activity was too precipitate. There was a very general misconception of the benefits of a Royal Charter, which could not give any protection against, or jurisdiction over, the unqualified or irregular practitioner and his malpractices. A system of registration of all established practitioners and a Registration Board to exercise strict supervision over additions and to remove the names of defaulters must be looked to to achieve that real protection.

From Sir Alfred Mond's reply in the House of Commons last Tuesday, it is pretty evident the lucky 3,000 inhabitants of the lake dwellings in St. James's Park, and the *canteen*, will remain till the millennium!

The President and Council of the Royal Academy have purchased the following works under the terms of the Chantry bequest: "Feeding the Fowls," oil painting by Mark Fisher, R.A.; "Epsom Downs: City and Suburban Day," oil painting by Alfred J. Munnings, A.R.A.

Captain E. A. Evans, F.S.I., A.M.I.C.E., of Welshpool, county surveyor of Montgomeryshire, who on the 6th inst. was appointed county surveyor of Carmarvonshire, a post rendered vacant by the death of his father, the late Mr. E. Evans, has written to the County Council declining to take up the appointment.

Mr. Bonar Law on Monday, in reply to Sir J. Rees, said that the threatened destruction of a number of City churches was not a matter in which the Government could take any action.—Sir J. Rees: Can my right hon. friend refer me to any authority which can and will act in the matter?—Mr. Bonar Law: I hardly like to suggest the Archbishop of Canterbury.

The Ministry of Health has informed Ealing Town Council that 17s. (for non-parlour houses) and 19s. (for houses with parlour) are not adequate rentals for the new municipal houses now being erected at Village Park. The council, they say, must charge (exclusive of rates and water charges) 13s. and 15s. 6d. for the two types of houses. With the rates, etc., added, the tenants will therefore have to pay 20s. and 24s. weekly.

Our Office Table.

Messrs. W. and G. Foyle, Limited, of 121, Charing Cross Road, W.C., are publishing at 1s. 6d., 1s. 8d. post free, a very useful little "Dictionary of Terms and Definitions" for surveyors and valuers, by H. G. Lampitt, specially prepared for candidates for the examinations of the Surveyors' Institution and similar bodies. Not to them only; for we are not ashamed to confess that we have found it refresh our memory in regard to the meaning of not a few words which are not so generally used as the rest, and so will architects, builders, surveyors, and estate agents generally.

The Chapel of Lincoln's Inn is in process of restoration after the serious damage it suffered in the air raids. All its stained-glass windows, dating from the Fourteenth and Fifteenth Centuries were shattered by a bomb which fell in a German aid raid. The fragments of glass were carefully picked up and later on packed in tissue paper in cases and sent to a place of safety. Now experts are restoring the lights. The Treasurer's window of coats of arms has been completed, and two other windows partially restored. The shower of glass within the chapel damaged much of the carved woodwork of the pews, and the organ was so damaged that repairs to it alone will cost £500.

Sir Aston Webb, president of the Royal Academy, is forming a group of representative artists to judge with him the designs of village signs in the competition for which the *Daily Mail* is giving £2,100 in prizes. In an interview with Sir W. Beach Thomas last Friday, he said he expected keen competition and eager interest among both professional artists and villagers. The setting up of a village sign—for choice with the village green as the site—would be, in fact, the revival of an art that once flourished greatly in our villages; for there were many village signs, as Sir Aston Webb recalled, in pre-Reformation days. He mentioned one at Wolferton, which gives the name of the village in very visible lettering, and is also a signpost pointing in four directions. Sir Aston Webb is in favour of giving competitors the greatest latitude. What is wanted is a village sign not costing more than £200. It may be wood or metal or both, and the price will more or less control the size. The design may be double, or front and back, or single. It may be wholly modern, or garnished with heraldry, or adorned with punning mottoes. There will be a public exhibition of all designs sent in.

At last week's meeting of the Corporation of the City of London, Sir Vansittart Bowater presiding, Mr. Deputy Ellis moved a resolution protesting against "such wholesale destruction of City landmarks" as the City churches, and calling on the proper authority to withhold its sanction to the proposal. A letter from Mr. Arthur Keen, hon. secretary of the Royal Institute of British Architects, was read. The writer observed:—"The view of my council is that except in cases of urgent public need no single church in the City should be sacrificed. It seems probable that in asking for many of these churches may be given up, but the whole principle of the destruction of old, historic churches in the interests of new ones is wrong, and should be strenuously resisted. My own view is that in some cases other uses should be found for these churches, and there may be public bodies or societies to whom, under proper restrictions as to upkeep and access, they might be leased." Having expressed his astonishment that three members of the Corporation, who were also members of the Commission, should have signed the report without reservation, Mr. Ellis said that it had been left to two members outside the City to make reservations—Lord Hugh Cecil, who urged that none of the churches should be sold, and Sir William Carr, who disagreed with the pulling down of many of them. Many years ago, when the question of the preservation of one of the City churches in the patronage of the Corporation was suggested by the Bishop of

London, the general tenor of the discussion was, "Tell the Bishop of London to mind his own business." (Cheers.) He was quite sure the Corporation would not allow this wholesale destruction. St. Mary-at-Hill, the headquarters of the Church Army, was one of the finest churches in the City, and its average congregation at the services was 700, yet the Commissioners said, "Away with this church, we want the brass." At St. Michael, Cornhill, where the Lord Mayor was a churchwarden, there were last year 273 services and 30,000 attendances, the average week day congregation being 246 and the communicants numbering 435. No attention was paid by the Commission to those figures. The last day census of the City showed a population of 364,000. Alderman Sir Lulham Pound, who is a member of the Commission, defended that body's action, and proposed an amendment that the Commission's report, when published, should be referred to the General Purposes Committee. Professor Sir Banister Fletcher championed the cause of the retention of the churches, and said the Corporation must not listen to this act of "architectural Bolshevism." The amendment was lost by a large majority. The resolution was passed with about six dissentients.

At a special meeting of the Ross Urban Council, held last Saturday, Colonel O. R. Middleton (chairman) said the clerk had sent all the four lay-out plans for the Duxmere site housing scheme for "remarks and suggestions," in accordance with the housing memorandum; but the Birmingham Commissioner had returned them all, declining to discuss them. The Commissioner wrote that he is strongly firm in his opinion that the Council should place the work in the hands of a competent architect, one who has had experience in lay-out and carrying through of housing schemes. In the Commissioner's opinion none of the lay-outs submitted were capable of forming a basis for discussion. Continuing, the chairman said the funny part about it was that there came by practically the same post two letters from architects in the Birmingham district applying for the post, with the remarks that they had seen the report in the daily press that a competent architect should be appointed. It was a rather curious coincidence, and some of the councillors thought it looked very much like as if these architects were working in connection with the housing office in Birmingham. The council considered it advisable to appoint another architect, although the Commissioner had previously approved of their former appointment. But the council declined to go so far afield as Birmingham, and agreed to appoint Messrs. Betington, Nicholson and Co., of Hereford, who had the Hereford city scheme in hand.

Certain changes have been made in the tests for admission to the Royal Academy Schools, which will take effect after June 10 next. The tuition given in the schools is free, and valuable studentships and prizes are awarded to successful students. Application for admission to the schools of painting, sculpture, and architecture may be made at any time. Each applicant must fill in a form, to be obtained from the Secretary, Royal Academy, Piccadilly, W.1, and must deliver it, with the specimens of work required, addressed to the keeper at the schools entrance, Burlington Gardens, W.1. These specimens are left—entirely as regards painting and architecture, and largely as regards sculpture—to the applicant's own choice, but they are expected to show considerable experience and a high standard of merit. If the work submitted has these qualities, the applicant will be admitted as a probationer for a period not exceeding three months. On passing successfully the period of probation the applicant will become a student for a term of years, subject to satisfactory attendance and progress.

A seventh edition of "Notes on Property Law and Investment," by S. Ford, Hon. Associate R.I.B.A., and Barrister-at-Law (London: Evelyn Nash Co., Ltd., 2s. 6d.) is a thoroughly up-to-date work, answering as it does many of the inquiries constantly put on mat-

ters connected with the tenancy or purchase of houses. There is, especially just now, no subject so closely identified with our very existence, and the author has put his practical experience, extending over a period of twenty-five years, in as few words as possible to good purpose. The opening chapter on house-hunting, the concluding chapter on the effect on property of the war, and the carefully thought-out forms for leases and purchases should be particularly acceptable to people who are not renting or buying through a society or estate agent.

The Executive Committee of the Architects' and Surveyors' Assistants' Professional Union on Tuesday last addressed a well-reasoned remonstrance to Dr. Addison protesting against the enforcement of Section 5 of the Housing Additional Powers Act, pointing out that, rigorously applied, it will close many architects' offices, and render idle many assistants, of whom only a small percentage will be absorbed in connection with housing schemes. Most of them are ex-Service men, many of them having attained high rank and distinction during their brief Army histories. Their careers have been badly broken by the war; now, just as they are getting on their legs again, they are once more to be turned from their professional work, without even the Army open as a means of livelihood.

The model form of contract for lump sum prices (D.88) issued in September, 1919, has been revised, and a revised form of contract (D.88A) issued. A new clause as to wages and hours and other conditions of labour has been adopted in view of the alterations in the Wages (Temporary Regulation) Acts brought about by the Industrial Courts Act, 1919. The provision for adjustment of the contract price in the event of alterations in rates of wages and cost of materials after the delivery of the contractor's tender has been extended so as to provide that the contractor shall be reimbursed any actual out-of-pocket expenses which he has reasonably incurred by reason of and in relation to such alterations. With regard to any additional payments for workmen's compensation insurance consequent upon increased wages, the allowance to the contractor should not exceed the charges made by the Accident Association Offices. Under the original form of contract, the contractor was required to furnish a schedule of prices showing the rates of labour and prices of materials ruling at the date of the tender. This schedule of prices is not required under the revised form of contract, although a contractor may if he wish deposit such schedule with the employer as evidence of the prices believed by him to be current at the date of the tender. For the purpose of any adjustment of the contract price in consequence of alterations in current rates of wages or prices of materials, the contractor will be required to furnish evidence as to the actual rates and prices paid, and in the event of any question or dispute whether any alteration has taken place, or as to the extent, if any, by which such alteration should affect the contract price, the matter is to be referred to the Minister of Health for determination.

Judge Amphlett, of the Birmingham County Court, "with considerable sympathy for the lady," decided that as a widow and executrix of her husband's will she had rights from her husband's interest in the tenancy of the house in which they both lived, and therefore no protection under the Rents Act.

The Victoria and Albert Museum has received from Mrs. Leopold de Rothschild a pair of silver-gilt candlesticks for an altar, enriched with enamels and plaques of rock crystal, Italian work of the highest quality, dating from the sixteenth century. The group of three pieces is attributed to Valerio Belli of Vicenza, whose work in the carving of crystal is celebrated by Vasari.

The death is announced of Mr. Frank Matcham, the theatrical architect, from blood-poisoning. Born at Newton Abbot sixty-six years ago, Mr. Matcham began to specialise in theatre designing early. Over a hundred British theatres and music-halls were built to his designs, and he was an expert in all questions relating to the "line of sight" in theatres, his aim being a good view of the stage from every seat in a theatre.

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AND ENGINEERING JOURNAL.

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War Memorial, Knowlton, Kent. "Weekly Dispatch"
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Currente Calamo.

We regret that further large increases in the cost of the production of this journal compel us either to increase its price or to economise its contents. We do not think it wise in these days of rising prices to burden our readers by asking for more money for the paper, and we are sure it is not in the interest of our advertisers to do so, for obvious reasons. We shall, therefore, adopt the other alternative, which will not be felt seriously, as the season is approaching when meetings of the Societies cease, and our space is relieved by the absence of reports thereof and similar matter. We may also remind readers, especially those who subscribe direct to the office, that before many days are over the postage on all newspapers will be more than doubled. For the present we shall not make any increase to direct subscribers, and will book any fresh ones who remit at once, as we cannot undertake to do that indefinitely. At the moment economy of paper is our first aim, as since last September the difficulty each month of obtaining adequate supplies has increased as fast as the price thereof. We have, therefore, regretfully to intimate that for the present till paper is more easily obtainable, and postage is less onerous, our exchange list with our contemporaries and the despatch of free voucher copies to advertisers are compulsorily suspended.

We think the Committee of the University of London, to which the Government's offer to purchase and present the site for the proposed new University buildings has been referred, will be unwise to accept it. Practically an option on the same site was given to the University by the Duke of Bedford in 1912; and in our issue of February 23 of that year we pointed out its disadvantages architecturally and otherwise. On March 22, 1912, we illustrated and commented on Mr. David Barclay Niven's much more practical and probably more economical proposal to utilise the area facing New Oxford Street, between Bloomsbury Street and Museum Street, on which the proposed quadrangle would show the buildings to great advantage, would be equally near the British Museum, and would be a great and popular metropolitan improvement. If anyone will refer back to the

fully detailed plan of Mr. Niven's scheme, which we gave on p. 410 of our issue of March 22, 1892, and compare it with the block plans which have just been given by some of the daily papers, he will see at once that the site facing New Oxford Street is infinitely more capable of adequate architectural treatment, more accessible, and better calculated to appeal to the imagination of the people as the visible embodiment of the University as a great public institution than the one now favoured by the Government, which is comparatively shut in, which encroaches seriously on open spaces that need not be sacrificed, and which we venture to predict will cost more in the long run than the one we prefer.

The converting of large and tall houses into suitable flats would seem to be a sensible thing to do. While we are waiting for new dwellings to be built, these buildings might well be adapted and utilised. But here our effete leasehold system and our common form leases and agreements come into play to make this plan impossible. Perhaps a clause could be inserted in the big Bill that is to be brought in by Government giving the Courts power to cancel covenants which prevent the fullest use being made of existing houses by their cutting up and conversion into flats. The Courts would then consider the opposing rights of various parties concerned, and arrive at some fair compromise for the public good. Meanwhile the recent case of "Berton and Others v. London and Counties House Property Investment Company" shows clearly enough that these and many other things cannot be done at present. There the plaintiffs, as freeholders of a house in Dulwich Wood Park, sued the defendants as assignees of the lease, claiming possession for breach of the covenant to keep the premises as a private dwelling house. This was a house of the mansion type in a good neighbourhood, and the defendants had let it all out in working-class tenements to some twenty people. Of course, the covenant was broken, and Mr. Justice Rowlatt declared the lease at an end. But that did not dispose of the tenants, who must be dealt with later. In the present pressure for dwellings it may be hoped that the new Act coming will try to deal broadly with the whole serious problem, as to which the Law Courts can do little or nothing.

A very interesting statement is quoted by a correspondent of *Country Life* from a paper communicated to the Society of Antiquaries in 1914 by Sir Lawrence Weaver, who discovered in the Bodleian Library at Oxford three manuscript volumes containing the detailed accounts—to the utmost farthing—of the building of Wren's City churches. Here are the costs of the thirteen which the Commission would propose to demolish:—

	£	s.	d.
St. Magnus the Martyr	9,579	19	10
All Hallows, Lombard Street ..	8,058	15	6
St. Michael Royal	7,455	7	9
St. Andrew by the Wardrobe ..	7,060	16	11
St. Mary Aldermanbury	5,237	3	6
St. Nicholas Cole Abbey	5,042	6	11
St. Michael, Cornhill	4,686	10	4
St. Clement, Eastcheap	4,365	3	4½
St. Stephen, Coleman Street ..	4,020	16	6
St. Mary-at-Hill	3,980	12	3
St. Alban, Wood Street	3,165	0	8
St. Anne and St. Agnes	2,448	0	10
St. Vedast	1,853	15	6

The other five churches on the Commissioners' list are not by Wren, and no figures as to their cost are available, with the exception of St. Mary Woolnoth (by Wren's pupil, Nicholas Hawksmoor), which is included with those above at £3,457 15s. 9d. These are building costs of the latter half of the seventeenth century. They would now be quite five times what they were in Wren's time. An additional proof of the penny-wise and pound-foolish policy which seeks their destruction.

The Manchester Corporation put in force last Friday, for the first time, the Housing (Additional Powers) Act, 1919, which renders any person liable, after December 3 last, to a fine not exceeding £100, or imprisonment not exceeding three months, for demolishing, without the written permission of the local authority, any dwelling-house reasonably fit for human habitation, or for using it otherwise than as a dwelling-house. Messrs. J. G. Brenner and Co., Ltd., toy manufacturers, Great Jackson Street, Hulme, appeared at the City Police Court, last Friday, to answer three separate summonses in respect of premises numbered 59, 61, and 63, Great Jackson Street. Mr. A. F. Pickford, who appeared for the prosecution, said the summonses were taken out under subsection 1 of section 6 of the Act, and pointed out that, in addition to the liability of the company as such, each director—Mr. John George Brenner, the managing director, Mr. Algernon J. Bailey, and Mr. John McCullagh, who

were also summoned separately—was guilty of a like offence, unless he proved that it took place without his consent or connivance. The facts of the case were that the company purchased the property in November, 1919, and that at that time all the houses were what was known as farmed lodging-houses, being in the occupation of two tenants, who sub-let them, furnished, to thirteen different families. It was, therefore, quite obvious that the premises were reasonably fit for human habitation at that date.—In giving their decision, the magistrates (Messrs. J. Shaw and H. Rothwell) said there was no doubt that when the three houses were taken over it was fully intended that they should be used for business purposes, and although there were one or two people living there now they were not tenants in the ordinary sense of the term, as they were in the employ of the company. It was pleasant to hear of people getting on in the world and extending their businesses, but at times like these, when houses were very difficult to get, they should be careful not to interfere with the housing of the public. The company would be fined £50; Mr. Brenner £50; Mr. McCullagh £25, and Mr. Bailey £25. There would also be two guineas extra costs.

An Inter-Allied Housing and Town Planning Congress is to be held in London from June 3 to June 9. Delegates have been appointed to attend from the following countries:—Australia, New Zealand, U.S.A., Belgium, Cape Colony, Canada, Czecho-Slovakia, Jugo-Slavia, Denmark, Egypt, Finland, France, Holland, Italy, Japan, Norway, Poland, Roumania, Spain, Sweden, and Switzerland. The local authorities throughout the United Kingdom will be very largely represented, and it is anticipated that the Congress will number from 700 to 1,000. Two days will be devoted to the proceedings in the Central Hall. Four days will be devoted to the study of actual housing schemes, and the delegates will visit two important regional centres of housing activity in Bristol and Birmingham. A seventy-mile journey to inspect the housing schemes in the northern home counties will be taken, and various schemes in the neighbourhood of London will receive special attention. The programme of the Congress will include national post-war housing and town planning policies, more especially as regards new legislation and financial provisions; the preparation and carrying into effect of national programmes to secure proper housing conditions for every family; the minimum of housing accommodation necessary to provide for the full development of a happy family life—this to be discussed in the light of the higher standards of comfort and life which are now recognised; standards of building construction and the development of new methods; the use of new materials; and national and regional town and rural planning developments. The Government will give an official garden party at Hampton Court on Monday, June 7. We fear garden parties are little likely to solve the financial difficulties which,

thanks to the mismanagement of the Government, daily threaten more and more menacingly the realisation of the projects the Congress is called to discuss.

PROPERTY LAW REFORM.

Every lawyer in the House of Commons, and elsewhere, can talk about the anomalies of the law of property; but when any reasonable chance of reform offers, their zeal is conspicuous by its absence. Whether this is due to the fear that more rational facilities for land transfer mean shorter lawyers' bills, or whether the Government is simply desirous of adding another failure to the long list of abortive measures, which from the start have wasted time this session, we do not know, but it will be a thousand pities if the Lord Chancellor's Bill, which has been referred to that refuge of despair, a Joint Committee of both Houses, is to figure in the usual massacre of the innocents.

In many respects the Bill resembles that introduced into the House of Lords in 1915 by Lord Haldane, and in some cases it differs for the better. In others, it needs amendment, and possibly extension. It is a long Bill, containing 178 sections and 16 schedules, but any amendments might easily be grafted on to it if the disposition exists. But the objects and scope of the measure are good and practical, and it would certainly simplify things greatly. Any readers who doubt this should read a pamphlet entitled "The Line of Least Resistance," by Mr. Arthur Underhill, published last summer, and is referred to in a memorandum circulated with the Bill. Some of the present anomalies of the law are so ridiculous that belief in their existence would really be difficult; but the authority is too reliable to admit of doubt. Here is one instance: "I own a house standing on about half a rood of land. The greater part of the site is freehold in fee simple, but a few square yards of the kitchen and the dining-room are held for a term of 2,000 years at a peppercorn rent, with a covenant to keep a wall in repair which is now useless to anyone, and a proviso for re-entry on breach of that covenant. Were I to die intestate, the greater part of the house would go to my heir"—the eldest son—"subject to my widow's right to a life estate in one-third of it for her dower, while the leasehold part of the dining-room and kitchen would go as to one-third to my widow absolutely and as to two-thirds to my next-of-kin—i.e., all the sons and daughters equally." If there were no children, it is doubtful if any lawyer could tell his client offhand what would happen, except that the cost of discovery of those entitled to the proceeds of the leasehold might considerably exceed its total value.

Such cases would be met by the intention of the Bill to abolish at once "all the complexities and incidents of two of the three existing systems of tenure, viz., the freehold and copyhold tenures and enacting in effect that henceforth all land now held as freehold or copyhold shall have precisely the same legal incidents as if it were leasehold land holden for a term, say, of 100,000 years at a peppercorn rent." No one can lose by this except stewards of manors and other obsolete conservators of rights which are anachronisms.

Another welcome reform in a different direction is the proposal to facilitate the transfer of land by relieving would-be purchasers from the present obligation to investigate trusts. Settlements, of course, but they would not concern a purchaser, mortgagee, or lessee. Their dealings would always be direct with the ostensible legal "estate owner," whether such really or

only a trustee. The extension of compulsory registration to new areas and generally may or may not be desirable. But if it is desirable—past experience, we incline to think, leaves that still debatable—it will be facilitated by every other reform proposed by the Bill; while if the registration clauses were dropped, nothing else in the Bill would suffer.

Part VIII., which deals with the law of succession in cases of intestacy, will, in our opinion, bear a good deal of discussion. That the alteration which proposes to make the beneficial interest in, and legal title to, all property, real or personal, devolve similarly, is a just and advisable one few will dispute? To-day a man dies intestate, leaving a son and several daughters and owning freehold land and houses. If there is no widow the son takes all and the daughters nothing, whereas if the property had been leasehold, even at the most nominal rent and for any number of years, all the children would have shared alike. If, for valid reasons, the father desired to settle a family estate otherwise it would still be in his power to do so. There is one matter which the Bill does not deal with, viz., the desirable change advocated by many competent authorities by which intestate property should go to the Crown and not to distant relatives. The delay and litigation attending the winding-up of intestate estates is familiar to all of us. Many will remember a recent case in which the revenue would have benefited to over a quarter of a million, in which the decision between the numerous claimants, represented by no less than seventeen counsel, turned on the question whether a certain person was born just before or just after a marriage which took place some time in the eighteenth century. That such useless expenditure of money and needless waste of the time of the Courts would be rare if the changes contemplated by the Bill were effected is surely not the least inducement to make an effort to place it on the Statute-book as soon as possible?

RECONSTRUCTION IN THE BUILDING INDUSTRY.*

By SULLIVAN W. JONES.

Before the war the whole building industry was on a false basis. Utter moral, if not financial, bankruptcy was the goal toward which the industry was working. This is not a cheering picture, but it is a true one.

THE TWO FUNDAMENTAL QUESTIONS.

Now the correction of all these conditions is not as difficult as it may seem. There are in reality only two fundamental questions involved; and even these two are closely related. The others are the natural developments of them. One is the contract system: the system of selecting contractors, either general contractors or sub-contractors, through competitive bidding on the price for a complete piece of work, under which the owner buys his building from the contractor or a group of contractors for a sum stipulated in advance of construction. The other question relates to the architect and his function.

THE FALLACY OF THE LUMP-SUM CONTRACT SYSTEM.

The contract system, which was in almost universal use before the war, had evolved about two wholly false assumptions: one, that a modern building can be described by drawings and specifications with sufficient completeness to provide for an accurate computation of costs, and, hence for bids on its construction that are fairly competitive; and the other that the contractors' business is that of selling finished work, and that he is essentially a merchant, who should, but by no means always does, possess a specialised

* From a Paper read before the Institute of Electrical Contractors of New York.

knowledge of the suitable and economical use of the things he buys and sells.

The first of these false assumptions leads us directly to a consideration of the sufficiency of the architect's service; while the latter involves a study of the contractor's status under this form of contract. We have thus established at least one direct relationship between the two fundamental questions. While they have been stated separately, so interwoven are they that discussion of them singly is impossible.

COMPETITION IN THE ASSUMPTION OF RISK.

Let us assume for the moment that we wish to hold to the lump-sum form of contract and competitive bidding. Obviously, then, we must find some way of giving to the contractor in advance the information essential as a basis for fair competition on price. Can it be done? Drawings and specifications may be improved through further standardisation; questions of quantities may be largely removed by the adoption of the quantity system, and the pricing of work may be placed upon a more accurate basis by the "open-price," which will also raise the price standard and assure a better margin of profit to the contractor. But are these partial remedies all that are necessary? There are always several ways of doing a thing—one less costly than another—and there will always be differences of opinion between the contractor and architect as to which is the best, or whether the substitute proposed is permissible under the contract. There will always be disputes over questions of quality, because quality, both in workmanship and materials, is well nigh impossible to describe. There is another important speculative element in every lump-sum contract, and it will exist even if drawings and specifications could be perfected. When a contractor signs such a contract, he sells short for delivery over a stipulated period of time, the quantities of labour and material required. It is this element of risk which has now acquired such proportions that no sensible man is willing to assume it. In some localities, in times more normal than these, or than those to which we look forward, the risk to the contractor from a rising labour market has been minimised by wage agreements with organised labour. In other places that stability has not been secured. And the material market never has been and never can be brought under control. Estimating, even under the most favourable conditions, will always involve risk to the contractor, and as long as there are risks, competition will be based on risks instead of work to be done. The low bid, whether it be too low or not, will always be the product of the greatest error or the assumption of the greatest risk.

COMPETITION SHOULD BE PRESERVED.

We are forced to the conclusion, it seems to me, that competition on price is economically unsound, which conclusion leads us to ask the question: Which is wrong—competition or the stipulated price? Competition is the foundation of healthy life. It is the necessary stimulant to development, to sustained human effort and efficiency. We should strive by every possible means to preserve competition in the building industry; competition between architects, between contractors, and between manufacturers. But let us also strive to make that competition of the invigorating and not the destructive kind.

Let us, therefore, examine the case for the lump-sum contract. I have said it had a corrupting influence on every one involved in it. Almost every ill and every evil in the building industry, I am satisfied, may be traced to the lump-sum contract. Under it the interests of the owner and contractor are diametrically opposed. The contractor's profit lies between the actual cost of the work and the amount of the contract. The greater the cost, the less the profit; and *vice versa*. The contractor's aim is, therefore, to deliver as little as possible, while the interest of the owner is in exacting the utmost of the contractor. The contract stands between them setting up antagonisms where there should be co-operation, creating conflict of purpose where unity of interest is essential to success. Under the lump-sum contract the contractor

has been a merchant, buying and selling finished buildings. All of us have been misled by thinking of the product rather than the method of production, by fighting over the division of profit rather than considering means of assuring reasonable profits to all who participate in the enterprise, including the owners. That is why the contractor has become a broker trading in contracts which represent finished buildings and their component parts, instead of a constructor or engineer.

CONTRACTOR MUST SELL SERVICE, NOT MERCHANDISE.

What is it the contractor has to sell? Service, his expert knowledge of the fabrication of buildings. In the last analysis service is the thing he has always sold, but instead of selling it to his employer, he has sold it to himself. The system has placed a premium on disloyalty and astuteness in the contractor rather than engineering skill and efficiency.

The same contradictions have confused and misled the sub-contractor. He has wasted his best energy fighting for trade discounts on the materials he purchases in order to resell them competitively at a possible profit. He, too, has struggled to make a livelihood through the purchase and sale of labour and materials when he should have centred his effort on perfecting his service, and finding a market for it. If service is the commodity in which the contractor deals, and we wish to preserve competition, obviously, then, competition must be in service and not in the price for finished work. The value of service is measured in terms of results. If economy is one of the results looked for, and secured, let it be an asset to the contractor instead of stolen fruit to be concealed.

THE ARCHITECT AND THE LUMP-SUM CONTRACT.

But we have not yet put in all the evidence against the lump-sum contract. The architect has not escaped its insidiously evil influence. The average owner, the owner who is inexperienced in matters of construction, undertakes his venture on the assumption that the architect is omniscient, and that when a bid is received on the drawings and specifications, it is all inclusive. This is the fallacy of the complete and sufficient drawings and specifications. A mistake is made when an architect accepts employment without disclosing to his client the unavoidable limitations which are placed upon his service. As the work proceeds, omissions are discovered, differences arise as to what is meant by vague expressions and indications, and the architect is at once placed on the defensive with respect to the sufficiency of his drawings and specifications. He has the choice of confessing his plight to the client or covering it up by compromise with the contractor. Some pursue the former and honourable course, others the latter. The position of the architect under such a contract is unwholesome. It is unfair to him. It is unfair to the owner who has sought the architect's advice on the basis of confidence. It is unfair to the contractor. It is a high tribute to the profession and the professional tradition that so few architects have succumbed to the temptations which constantly urge them to abandon the difficult rôle of conscientious servant.

THE COST-PLUS-FEE CONTRACT.

The cost-plus-fee contract, as we have known it, has been a compromise document. The status of the contractor, by reason of his contract liabilities, and by reason of the unchanged attitude of the architect and owner, was not radically different under this form of contract from what it had been under the lump-sum contract. While his interests theoretically coincided with those of the owner, the contractor failed to realise the nature of the relationship, and consequently his attitude of mind remained unaltered. The Committee feels that the change must be complete, and to accomplish that end, it is necessary to make such changes in the document as will give the contractor a new picture of his status and responsibilities. The Committee asserts that, "in the light of recent experiences of the Government in the use of the cost-plus-fee system, the following general principles are felt to be fundamental."

(1) The contractor becomes in effect a professional adviser of the owner, as his "Construction Manager" and should be relieved of all contract liabilities inconsistent with such a relationship; (2) For this purpose the owner should pay directly for all materials and should enter directly into contract with sub-contractors rather than having sub-contractors make their contracts with the contractor. Payrolls must be paid by the contractor and reimbursement made by the owner; (3) In view of this professional relationship, no "bond" guaranteeing performance is needed or proper, any more than for the architect.

It is difficult to comprehend at once the full significance of this statement. The principles enunciated find expression throughout the document. There was a discussion at the last meeting on the expediency of changing the term "contractor" to "constructor," or "manager of construction," or "constructing engineer," but it was decided a wiser course to pursue, to use the old and familiar term, and let the contractors' wishes gradually crystallise into the choice of some substitute term which would be more appropriate and more descriptive of the new function.

SEPARATE CONTRACTS.

This is the wording of the clause, which, in the older form of contract, was captioned "Sub-contracts;" it now bears the title "Separate Contracts":

All portions of the work that the contractors' organisation has not been accustomed to perform, or that the owner may direct, shall be executed under separate contracts. In such cases, either the contractor shall ask for bids from the contractors approved by the architect and shall deliver such bids to him, or the architect shall procure such bids himself, and in either case the architect shall determine with the advice of the contractor and subject to the approval of the owner, the award and amount of the accepted bid. The owner shall contract direct with such approved bidders, etc., etc.

This clause, it will be observed, establishes the relationship between the so-called sub-contractor and the owner or architect, which the sub-contractor has sought to realise through the elimination of the general contractor.

Under the new system the contractor sells his services on a professional basis at a certain percentage on the cost or for an agreed fixed fee, and his remuneration is understood to be for the use of his organisation and its knowledge of the building business applied to the particular enterprise; in fact, the methods we employ and include in the term professional practice are being approached steadily by those we have been pleased to call contractors and who have had to do with the actual business of building only. The selection of a contractor now becomes a question of the individual's or concern's reputation for honesty, ability, and business judgment rather than a question of a competitive price at which they will undertake the work; his relation with the owner becomes a more personal one—based upon confidence rather than on an entirely impersonal contractual relation.

THE ADVANTAGES OF THE COST-PLUS-FEE CONTRACT.

It must now be plain that the architect's status and function cannot be considered, without considering also the status and function of the contractor. It seems almost superfluous to point out the advantages to the whole building industry from making the cost-plus-fee contract the rule instead of the exception. It is important, however, for us to think of this proposed change in terms of results, so that we may all have a clear conception of what it is we are striving for. But when we think in terms of results, we again find it impossible to think of the architect and the contractor separately. First, the contractor, or let us call him the constructor, will be selected on the basis of confidence and his service record. Since the contractor's profit will no longer depend upon his ability to cheapen the work, which has been the motive underlying the general practice of offering substitutions, we

may expect fewer discussions of this kind in the future. Considerations of price alone will less and less influence the selection of materials. The architect and the contractor will work together instead of in opposition. The knowledge and experience in construction which the architect lacks will be furnished by the "constructor." This, to my mind, is one of the most important results that will be secured, for it must be realised, and is realised by the thinking element in the architectural profession, that ability in design, which reaches its highest development only in men who are sensitive, imaginative and impulsive, is wholly incompatible with the scientific quality of mind that works in exact terms of fact and statistics; an essential prerequisite to the proper performance of the "constructor's" function. Under the cost-plus fee form of contract, the architect, the contractor, and the owner enter into a tri-party agreement to accomplish a single end. It does not require much imagination to see in this change in the contractor's status the reincarnation of the master builder of the Renaissance, through a virtual, if not an actual, partnership of the two talents that produced the world's most inspiring and enduring architectural monuments.

The salvation of the architect, the contractor and the industry lie in such a partnership of talents. If it cannot be brought about, I predict that contractors will try to become architects as well, and that architects will attempt to become builders—and in the broad sense, few will succeed. Buildings will be either poorly constructed or poorly designed, and the loss to the public and in the prestige of the industry will be immeasurable.

THE SOCIETY OF ARCHITECTS.

A copy of the articles of association showing the proposed revisions and amendments was posted to every member of the society on March 9, 1920, and on March 25 a resolution was passed adopting the revised articles, which was confirmed on April 15. The new articles are now the current regulations of the society.

TRANSFERS TO FELLOWSHIP.

Members elected previously to May 1, 1920, who are over thirty years of age and have been engaged in the practice of architecture for at least ten consecutive years and are still so practising, or who are Fellows of the R.I.B.A., are eligible to make application for transfer to the Fellowship Class. Members elected since May 1, 1920, who possess the necessary qualifications, have a similar privilege, but cannot exercise it for twelve months from the date of their election.

Members who are not at present eligible to make an application for transfer to Fellowship may do so when they acquire the requisite qualifications.

Application must be made on the prescribed form to be obtained from the society, and must be accompanied by evidence of qualifications by way of drawings and other testimonials of professional standing and ability, and by a remittance for the first annual subscription of £4 4s., which is returned in the event of non-election. Members of the society, if elected as Fellows, are not required to pay the entrance fee of that class.

The first annual subscription of all Fellows elected before October 31, 1920, will be credited to them to October 31, 1921, so that members transferred before the first-named date will not pay any increased subscription for the remainder of the present financial year, which is covered by their present membership subscription, which, if not already paid, must be discharged before an application for transfer can be entertained by the Council. The annual subscription of members is now £3 3s. as from November 1, 1920.

After negotiations which have extended intermittently over sixty years, the Amalgamated Society of Carpenters, Cabinetmakers, and Joiners seems likely at last to amalgamate with the older but much smaller General Union of Carpenters and Joiners. Mr. W. Makin, who had been for many years secretary of the General Union, died a few days ago.

THE PROSPECTIVE COMPETITOR METHOD OF VALUATION OF PROPERTY.*

By M. L. BYERS, M.Am.Soc.C.E.

SYNOPSIS.

The Courts having ruled that, in estimating the fair value of any operating property, the fact that the property is a going concern must be taken into consideration and that this fact is an element of value, there remains to be devised a method whereby, when the fairness of the rates is in question, this fair value of the property can be estimated with reasonable accuracy.

The method which of late years has found most favour is that usually termed the Cost-of-Reproduction Method. In a general way, value is arrived at by this method about as follows:

From cost of reproduction of the physical property (including a percentage for overhead costs) deduct "depreciation"; to this add going concern value.

The method does not seem to rest on sound economic principles, and parts of the practical operations involved in its use do not appeal to the logical mind. Too much is left to mere personal opinion uncontrolled by guiding principles.

One Court observed that he reluctantly accepted this method because he did not know of a better one. The remark of the Master in the recent Denver Water Company case with reference to going concern value, is also illustrative. He states:

"There is no absolute standard by which the fair value of this element can be determined, and I adopt \$800,000, because no matter how often I have considered the evidence and the arguments my mind always comes back to this amount as reasonable and fair to all the parties."

Further illustration of the difficulties produced by this method is found in the Minnesota Rate Decisions, in which Justice Hughes pointed out in connection with the valuation of the land of the railway that "the assumption of its (the railway's) non-existence, and at the same time that the values that rest upon it remain unchanged, is impossible and cannot be entertained."

Presumably the reproduction theory may be based on the view that this presents the means of estimating what the property under valuation would have cost to construct and develop if present-day conditions as to prices of labour, material, land, etc., density of population, and similar elements had been present during such period of construction and development. This is merely a variation of the theory that the fair value of the property is measured by the investment whereas, as a matter of economic fact, there is, in general, no necessary relation whatever between the value and the cost of a property.

What is urgently needed at the present time is a rational method of valuation which is in harmony with sound economic principles and does not clash unnecessarily with well-established legal decisions.

The analysis of a new method of determining the fair value of a railroad property, which follows, is founded on seven basic propositions:—

1. A railroad corporation is a private corporation; its property, although devoted to the service of the public, is private property, and its value is as completely under the protection of the constitution as that of any other private property.

2. The property of a railroad corporation devoted to the service of the public, and which has been acquired through gifts or donations, or from earnings, is, equally with property acquired from the proceeds of the sale of securities, private property, and as such is under the protection of the Constitution. The surplus from the earnings of the corporation is likewise private property.

3. Every enterprise subject to regulation is entitled to be permitted to earn such a

* This paper was not presented for discussion at any meeting of the American Society of Engineers, but written communications on the subject are invited for subsequent publication in *Proceedings*, and with the paper in *Transactions*. We reproduce the main portion, because, although conditions here may differ in details, it cannot but interest surveyors and valuers here at the present time to study the conclusions arrived at by a leading American authority.

return as, in the field of free and open competition, would ordinarily accrue to a similar expenditure of energy, foresight, and capital.

4. A public utility is not entitled to a return accruable solely because of its possession of monopolistic protection from competition.

5. Every kind of business, without any exception, has an element of value known as going concern value, and such going value is in no way connected with the monopoly or goodwill value.

6. The market value of any property results from the use to which it is put and varies with the profitableness of that use, present and prospective, actual and anticipated. There is no pecuniary value outside of that which results from such use. The amount and profitable character of such use determine the value. The measure of that value is its profitableness, present and prospective, actual and anticipated.

7. The fair value of a property is measured by its profitableness, present and prospective, actual and anticipated, under fair rates.

The analysis results in the development of the prospective competitor method of valuation. The steps recommended in the case of a valuation of a monopoly by this method are as follows:—

1. Production of a prospective competitor (instead of "reproduction" of the property under valuation).

2. Determination of the rate level which (within that maximum period of time beyond which capital would not be willing to wait) will enable said competitor to earn a fair return on its investment to date.

3. Determination of the annual net earnings, as of the date of valuation, of the property under valuation and at the rate level indicated in Item (2).

4. Capitalisation of the annual net earnings indicated in Item (3); this capitalised amount is the fair value of the property under valuation. In the case of properties subject to competition, the fair value of all such properties combined (and which combination, consequently, may be treated as a monopoly) is first obtained by the preceding method; the common fair rate level is also ascertained. By the application of this rate level to the individual properties, the fair return of each is ascertained. Capitalisation of such individual fair return gives the individual fair value.

The competitor method practically involves no difficulties which are not met with in the reproduction method, while it is logical throughout and is based on sound principles of economics.

I.—GENERAL PRINCIPLES AND RECOMMENDED PROCEDURE.

1.—RAILWAY VALUATION, ITS THEORY AND USES.

For many years the railways have contended that the activities of the Interstate Commerce Commission and of the State Commissions have resulted in the lowering of transportation rates to a point where the prosperity of the industry has been seriously interfered with. The Commissions have always replied to this accusation that, while the railroads certainly are not earning the normal rate of return on their capitalisation, they are earning, at the very least, a fair rate of return on their fair values; that the real trouble with the railroads is and has been that they are so greatly overcapitalised that a fair charge for transportation produces a comparatively small rate of return on the enormously watered capitalisation.

After many years of persistent recommendation on the part of the Interstate Commerce Commission, Congress passed the law calling for valuation of the railroads, which is now in progress. The principal reasons given by the Commission for its recommendation were that the information was needed in connection with the proper execution of the duties of the Commission, and that the controversy over railway values should finally be cleared up in the interest of all parties.

Since the passage of the Valuation Act, numerous comments have been heard at frequent intervals, among these being statements

that it is impossible to find the value of a railway property; that the value, being dependent on earnings, is constantly changing, and that the valuation to-day would be out of date to-morrow; that valuation is useless for rate-making purposes, as the rates do not depend in any way on the value of the property used; that there is no need for the regulation of railway rates, for the reason that the business itself affords a sufficient check over excessive rates (the very great general increase instituted by the Government as a war measure hardly supports this last contention); and that there are a number of values for the same property, depending on the use to which the data are to be put.

Discussion as to what constitutes fair value has been even more interesting, being largely coloured by the interests of those entering into such discussion. The representatives of the States have been consistent in their position that it was their duty to see that the public did not have imposed on it a valuation entirely in excess of the equities of the situation. The railroads have been equally energetic in their efforts to see that the resulting valuation did not arrive at an inequitably small result. Apparently the Division of Valuation of the Interstate Commerce Commission early came to the conclusion that the railroads were amply able, on all proper occasion, to demonstrate clearly the propriety of deciding in their favour any doubtful points, and that the proper policy was to start out with assumptions which would produce the smallest values: then, through hearings before the Division and before the Interstate Commerce Commission, thrash out the points of controversy to an equitable conclusion.

One of the first claims made as to the constitution of "value" was that it was identical with "cost of reproduction" of the existing property, no allowance being made for appreciation in the value of land; the railroads, being public utilities, were assumed not to be entitled to any unearned increment. As this position apparently became legally untenable, and as the items of cost of reproduction ordinarily overlooked by the casual observer became increasingly important, a tendency developed to assert that value equals, not cost of reproduction, but original cost to date of the existing properties.

The effect on value produced by depreciation and appreciation existing in the property has also been widely discussed. Another of the frequently heard statements in connection with the ascertainment of value is that it is not a matter of fixed rules, this quotation from a decision of the Supreme Court being interpreted to the effect that there are no fundamental principles on which the ascertainment of value can be based, thus still further befogging an already complex subject.

In none of the many discussions on the ascertainment of value has there been any complete analysis of the problem, followed by an attempt to work out principles solidly founded on equity and economics. The present discussion is an attempt to analyse the entire problem and then to build up a rational theory of valuation in harmony, if possible, with such legal generalities as so far have been promulgated.

2.—WHAT IS A PUBLIC UTILITY?

Ordinarily, when a public utility is mentioned, it is understood that a utility supplying water, or gas, or electric light, or transportation to a community, and operating under a charter as a corporation, is meant; that other activities such as farming, manufacture of steel, clothing, food, etc., are not so regarded.

There has gradually developed in the public mind a feeling that public utilities, because of their being public utilities, are subject to entirely different economic laws and have entirely different legal and moral rights and obligations from those of other forms of commercial activity. This unreasoned feeling has been the cause of much misunderstanding and dissatisfaction and of much ill-advised regulation.

Examined from the broad point of view, almost every form of commercial activity is

a public utility. The farmer does not raise the greater portion of his crops for his own use, but for the use of the general public. The manufacturer manufactures his product with the same object in view. The essential difference between the so-called public utilities and other forms of enterprise lies in the fact that, in the case of the public utility, there usually enters the element of monopoly, either because of the physical conditions surrounding it or because it is to the interest of the public that the enterprise shall be conducted without competition.

Perhaps a broad definition for a public utility is that it is an industrial activity conducted on such a large scale or under such conditions that the interests of a considerable portion of the containing community are vitally affected thereby.

Looking to the future—bearing in mind the great strides which have been made during the past fifty years in the organisation of various enterprises—it seems probable that, in the not distant future, many other enterprises will have arrived at that perfection of organisation where sufficient control is exercised by a few persons to enable them, if unrestrained, to reap the rewards possible only to monopoly.

It is sometimes stated that an enterprise conducted by a private individual is not subject to Government regulation. This is simply a misstatement of fact. It is also frequently claimed that the giving of the right of eminent domain by the public to certain corporations introduces factors which justify the public in establishing regulations not otherwise equitable. The purpose of the giving of the right of eminent domain has been widely misunderstood and misrepresented. In certain types of industry, in the absence of the right of eminent domain, it would be possible for a single individual to obstruct, or even to prevent entirely, the development of a particular enterprise. Yet it has often been to the public interest to induce private capital to enter such fields. To this end, under various restrictions the right to condemn property, on payment of fair compensation, has been granted. To claim that the conferring of this right carries with it the privilege of making later exactions on the grantee is as if a householder employed an artisan to do certain work for him in his house, gave him the key to the house in order to enable him to enter therein, and then stated to the artisan that because of having given him the key he is entitled to pay him a smaller compensation than the going rate for such service.

3.—WHEN AND WHY REGULATION OF INDUSTRIAL ACTIVITY BECOMES DESIRABLE.

Ordinarily, in industrial activity on a considerable scale, there are four important parties at interest—namely, the owner of the activity (the stockholder), the employee, the individual user of the product, and the general public.

Simply in his capacity of owner, the stockholder is interested only in the amount of profit obtainable from his investment, although that interest extends to the broad point of view and is not confined solely to the narrow limit of immediate results.

The employee is primarily interested in the conditions of service under which he is employed and the compensation received for such service.

The individual user of the service is interested in the quality and in the payment which he must make therefor. If the service which he desires is an unusually expensive one, it is to his interest that payment for such service be based on general averages of cost, rather than on the cost of the individual service itself. For example, the man who lives at one end of the street car line and has his business at the other end, desires that a single average fare be collected from each passenger.

The general public, although less acutely interested than the three other parties, does have a broad general interest of considerable importance. It is to its interest that the relation between productivity and effort expended (such as the amount of capital utilised) in securing the total production, be as favourable as possible, for by improving

this ratio the wealth of the community can be increased. The basis of the division of cost of service is also important. Shall the user pay the entire cost of production of that which he uses, or shall a portion of this cost be distributed (as by taxes) to the general public? In this connection, the general public must bear in mind that there is frequently an indirect value of the service which it alone receives; for example, the first transcontinental railroad in the United States made possible the development of the Western territories and the knitting together of widely separated populations into a homogeneous community. Lastly, there remains the relation between the character of the industrial activities and the requirement for good government. Will a given policy of industrial activity, if permitted, react on the political security of the community?

Ordinarily, competition and the relatively diminutive character of the individual industrial activity have been found to regulate satisfactorily the relations of the four interested parties mentioned. In the absence of competition, whether due to physical conditions or otherwise, and even in the presence of competition in the case of activities of great importance, some form of artificial regulation of the more or less conflicting interests of the various parties must be resorted to, or abuses will creep in and multiply to the point where dangerous unrest is created, as has been the case in several localities and on several occasions in the transportation industry of the United States.

4.—WHAT IS VALUATION AND WHAT ARE ITS USES IN CONNECTION WITH INDUSTRIAL REGULATION?

The casual observer would be apt to say that the valuation is the process of finding value. Such, however, is far from being the story. Valuation is the process of ascertaining one or more of a number of things, among which the following may be mentioned as being the most prominent:—

1. Forced sale value, being the amount in dollars for which a property would sell if thrown on the market, as at sheriff sale.

2. Market value, being the amount for which a property would sell when the owner is desirous, but not compelled to sell, and when the purchaser is desirous, but not compelled to purchase.

3. Fair value, being the value for which the property would sell if the commodity rates were fair, if the owner was desirous, but not obliged to sell, and if the buyer was desirous, but not obliged to buy.

4. Investment to date, being the net amount of capital which has been invested in the property to date, and, consequently, including expenditures for abandoned property and excluding the value of aids, gifts, grants, and donations received.

5. Original cost to date, being the same as investment to date, except that the expenditure for abandoned property is excluded.

6. Cost of reproduction, being the estimated cost, under normal conditions as of the date of valuation, of reproducing the existing property.

7. Physical depreciation, being the percentage of the useful life of the existing property which has been consumed through age and use.

8. Depreciation of obsolescence and inadequacy, being the percentage of the life of the property as a whole and for its present uses, which has elapsed.

9. Tax value, being the amount on which the property is taxed (and depending on the local tax laws).

The principal uses claimed for valuation in connection with industrial regulation are that the data are more or less necessary in order to arrive at equitable conclusions with reference to taxation, to individual rates, to the general rate level, to the amount to be paid in cases of condemnation and sale, to capitalisation, and to the giving of needed information to the investor.

5.—WHAT IS VALUE AND HOW MANY KINDS OF VALUE ARE THERE?

It is the fashion in certain circles to speak of value as being a nebulous sort of thing, undefinable and incomprehensible for valuation purposes. It is another example of the

cuttle-fish instinct to muddle the water with which the subject of valuation is so frequently approached. The necessary first step in any logical consideration of the subject of valuation is to define clearly this term in its intended uses.

Definition.—Value is a ratio in exchange.

In other words, it is a statement of the number of units of one kind for which a single unit of another kind is exchangeable. It is a mere abstraction and requires the addition of an explanatory and limiting term to make it available for practical use. To illustrate, a diamond may have the same money or pecuniary value as fifty tons of coal, but it has not the heating value of one ton.

The forced-sale value of a property (which is usually adopted as the tax value) is often only half, or less, of the normal fair value where neither buyer nor seller act under compulsion. Also, there is the sentimental value which the owner may place on a commercially worthless heirloom.

Definition.—Pecuniary value is the amount of money a property will sell for when the owner desires, but is not obliged to sell, and the purchaser desires, but is not obliged to buy.

In this discussion, unless specifically stated to the contrary, it is this value that is referred to whenever the term "value" is used.

Evidently (pecuniary) value, as defined, is determined solely by economic considerations.

Definition.—Market value is the value of a property as determined by present and probable future economic conditions.

Regardless of the fairness of the rates in effect in any property subject to regulation, market value is determined by the existence and probable continuance or discontinuance of these rates, and in disregard of their fairness except as this may reflect on their probable permanence.

Definition.—Fair value is the value which a property would have if, for the present rates, fair rates were substituted, and the reasonable certainty that they would continue in the future.

It is evident that there are as many values for a property as there are points of view from which the subject can be approached. For the purpose of this discussion, value will be limited to that for rate regulation and for condemnation and sale.

6.—PROFITABLENESS UNDER FAIR RATES THE MEASURE OF FAIR VALUE.

What is undoubtedly the fundamental economic law to be kept in mind in the valuation of property for condemnation or for rate regulation has been stated by the Supreme Court of the United States, in *Cleveland, Cincinnati, Chicago and St. Louis Railway Co. v. Backus*, 154 U.S. 439, in the following terms:—

"But the value of the property results from the use to which it is put and varies with the profitability of that use, present and prospective, actual and anticipated. There is no pecuniary value outside of that which results from such use. The amount and profitable character of such use determines the value."

Although it is true that, for a property not subject to regulation, the value at any given time is measured by the profitability, present and prospective, actual and anticipated, this is not the value (more properly termed the fair value) to be found for use in condemnation, or for use with reference to rate regulation. For such purpose, fair value is measured by profitability, present and prospective, actual and anticipated, under fair rates. If this were not the case, it would be possible, through rate regulation, to reduce the rates and, consequently the net earnings and the profitability of the property to any point arbitrarily selected, and then obtain a value for condemnation purposes, based on such unfair rates, which would be far below the fair value of the property. Such a procedure would seem, equitably, to be inconceivable.

The Courts have called attention to the fact that, where the fairness of rates is in doubt, profitability resulting from such

rates cannot properly be used in the determination of fair value. This is axiomatic. The converse is also axiomatic, namely, that where the rates are acknowledged to be fair, the fair value can properly be ascertained by the use of the resulting profitability as its measure.

As fair value is dependent on fair rates and fair rates on fair value, it would seem immaterial, when neither is known, which is to be ascertained first, except that, contrary to the general view, it is practically much more convenient first to ascertain fair rates and then therefrom to ascertain fair value, than to proceed in the opposite direction.

7.—"COST" V. VALUE.

When the fairness of the rates is questioned, it is impossible directly to apply any known variety of profitability to the measurement of fair value; "cost" in some relation to the property consequently must be used. A brief consideration of several special cases, however, clearly indicates that, in general, there is no necessary fixed relation between the cost of a property and either its market value or its fair value.*

If, therefore, cost is to be used in the determination of fair value, it is necessary that it be applied (1) under such special conditions as shall create a known relation between such cost and the fair value, and (2) where such established relation shall be equitable. Then, wherever such conditions can be simulated, one can properly utilise such variety of cost in the determination of fair value.

Except through occasional accidental coincidence, however, the only circumstances under which cost bears a fixed relation to value are those in which some one having the necessary power decrees that such commodity rates shall be charged that the resultant profitability will establish this chosen relationship. This can be done in the case of a monopoly, but it is an impossibility in the case of two or more properties subject to competition.†

In order that the owner of a monopoly under regulation shall not be deprived of that protection against confiscation which is guaranteed by the constitution, the next step is to inquire in what specific case, capable of being simulated under the above circumstances, it is equitable to enforce some relation between cost and value and as to just what this cost and this relation are. This is a problem in economics and economic principles only are involved.

(To be continued.)

After four days' use of explosives, the last of the famous Chatsworth conservatories was demolished on Tuesday. Thirty tons of glass were blown out, and 500 tons of ironwork sold for scrap.

Chicago will soon be able to boast of possessing the largest hotel in the world, the plans for which have been published. The hotel will be built in five separate units, and will face Lake Michigan. The architects have planned 4,000 rooms, and among the special features of the building will be a theatre seating 2,500 people, 400 small kitchens for the use of those visitors who prefer to cook their own meals, and a separate block of sixteen storeys for bachelors.

* A plant for the manufacture of furniture is constructed in the wilderness at a cost of \$100,000. No purchasers can be found for the product and the salvage value of the plant is only \$1,000. Here the relation of cost to value is as 100 to 1. A similar plant is built at the same cost where labour and raw materials are plentiful and where the market is so good that the average profits are \$18,000 per year. If capital is worth 6% per annum, the value of this plant is \$300,000 and the relation of cost to value is as 1 to 3. Between these extremes lie all varieties of relations between cost and value.

† Consider two plants, A and B, in competition. Being in competition, they must adopt the same selling prices, or one would do all the business. Assume that the "cost" of A is \$100,000 and that of B \$200,000; also that, at the present selling prices, A's gross earnings are \$6,000, and his net earnings are \$4,000 per year, while B's gross is \$9,000 and his net \$5,000. Suppose it is decreed that the selling price shall be raised one-third in order that A's net shall become \$6,000. Then B's net becomes \$8,000. Capitalising at 6%, A's value becomes $\frac{6,000}{0.06} = \$100,000$ and equals his "cost," while B's value becomes $\frac{8,000}{0.06} = \$133,333$ as against a "cost" of \$200,000. No selling price applied to both will give each the same ratio of cost to value.

Our Illustrations.

NOTGROVE MANOR, GLOS.: NEW STABLE BLOCK AND COACHMAN'S HOUSE.

Our illustration is reproduced from the drawing now at the Royal Academy. This group of buildings is in course of erection to provide a range of loose boxes for eight hunters, each loose box measuring 11 ft. x 13 ft. The large harness room is situated at the top end of the long block of buildings running south, and adjoining is the horse clipping room, with top light, boiler house, mess room, the grooms' room, and coach-houses. On the first floor accommodation is provided for sleeping quarters for the grooms and a large hay loft. The whole is grouped round a central courtyard. The stud groom's cottage and garden is situated to the north, and contains a kitchen, dining room, parlour, and three bedrooms, bathroom and offices. All the stonework for walling and mason is being obtained from the quarries on the estate. The roofs are being covered with old stone slates obtained in the neighbourhood. Messrs. Saunders and Son, of Cirencester, are the general contractors. Mr. Andrew N. Prentice, F.R.I.B.A., of Norfolk Street, Strand, is the architect. We illustrated his drawings of Notgrove Manor House (plan and view) in our issue of May 6, 1910.

LLOYDS AND NATIONAL PROVINCIAL FOREIGN BANK, PARIS.

The illustration, drawn in perspective by Mr. L. H. Bucknell from the design of Mr. Paul Waterhouse, represents the refronting of the premises at the angle of the Boulevard des Capucines and Rue des Capucines. Mr. Paul Waterhouse's design has undergone some modification since the date when this drawing was made, the scheme here represented being that originally submitted to the proprietors, the Directors of Lloyds and National Provincial Foreign Bank.

VILLAGE HALL, ITTON, MONMOUTHSHIRE.

This parochial building was erected during the early years of the war, and is built of local stone and stone slates. The plan and elevations show its character and detail. Mr. E. Guy Dawber, V.P.R.I.B.A., is the architect. The subject is exhibited at the present Royal Academy.

VILLAGE CROSS, KNOWLTON, KENT.

Sir George Frampton, R.A., designed and sculptured this "Weekly Dispatch" Braveest Village Cross, a handsome monument of Aberdeen granite presented by the "Weekly Dispatch" to the village that sent the highest percentage of its men to the war. Knowlton won the gift. It is a small hamlet of East Kent, some nine miles distant from Canterbury. The cross was unveiled by Earl Stanhope during the autumn of last year.

EMPLOYEES' HOUSING PREMISES, BOW ROAD, LONDON, E.

This drawing illustrates a proposed block of flats in Bow Road, E., for Messrs. Geo. Harker and Co., Ltd. The materials will be brickwork of picked London stock facings with purple brick dressings, wood sashes, and hand-made tiled roof. The architect is Mr. F. Milton Cashmore, A.R.I.B.A., of 26, Old Burlington Street, W.1.

THE ...



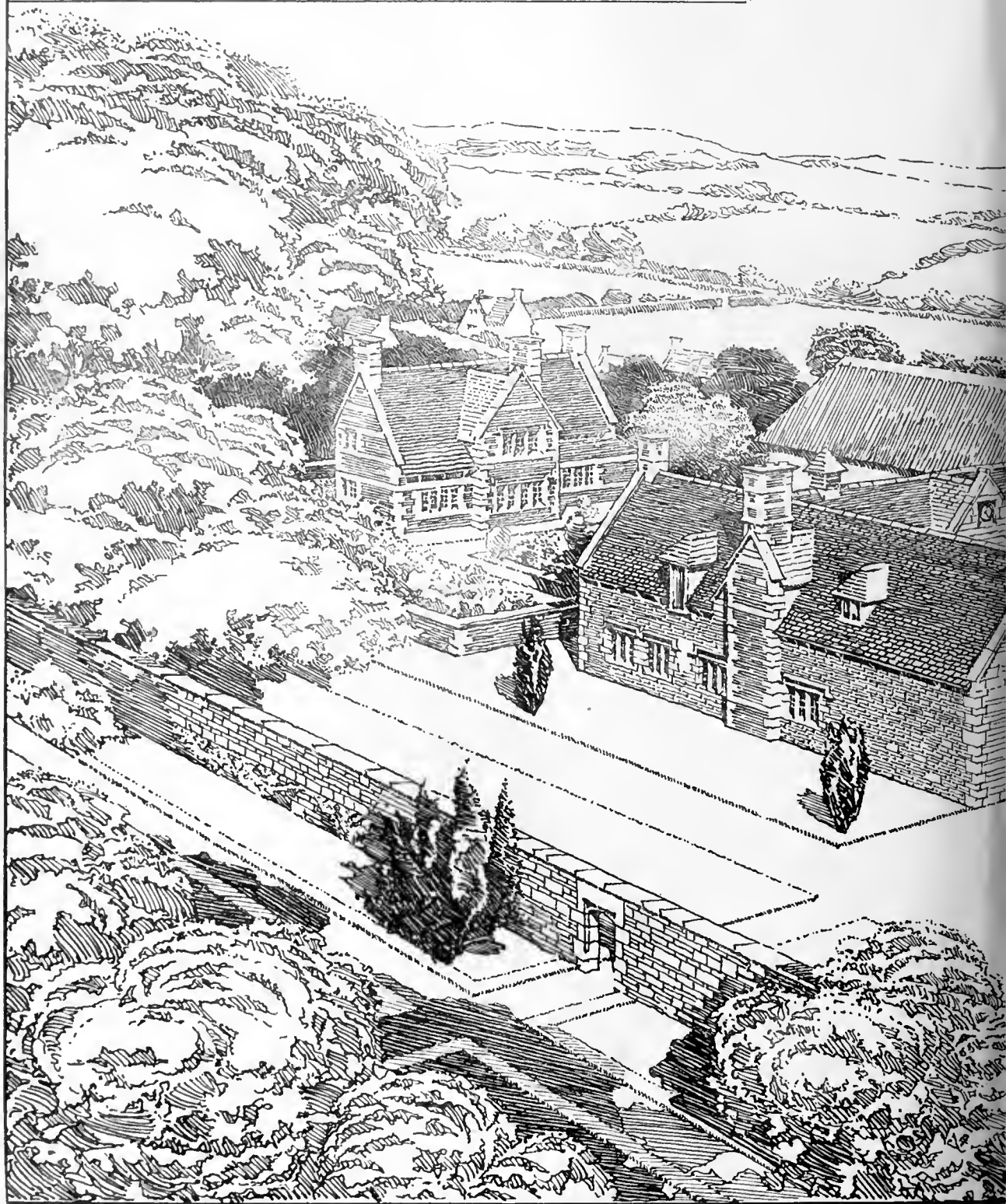
WAR MEMORIAL, KNOWLTON, KENT.
"‘WEEKLY DISPATCH’ BRAVEST VILLAGE CROSS."
Sir GEORGE FRAMPTON, R.A., Sculptor.

THE BUILDING NEWS, MAY 28, 1920.



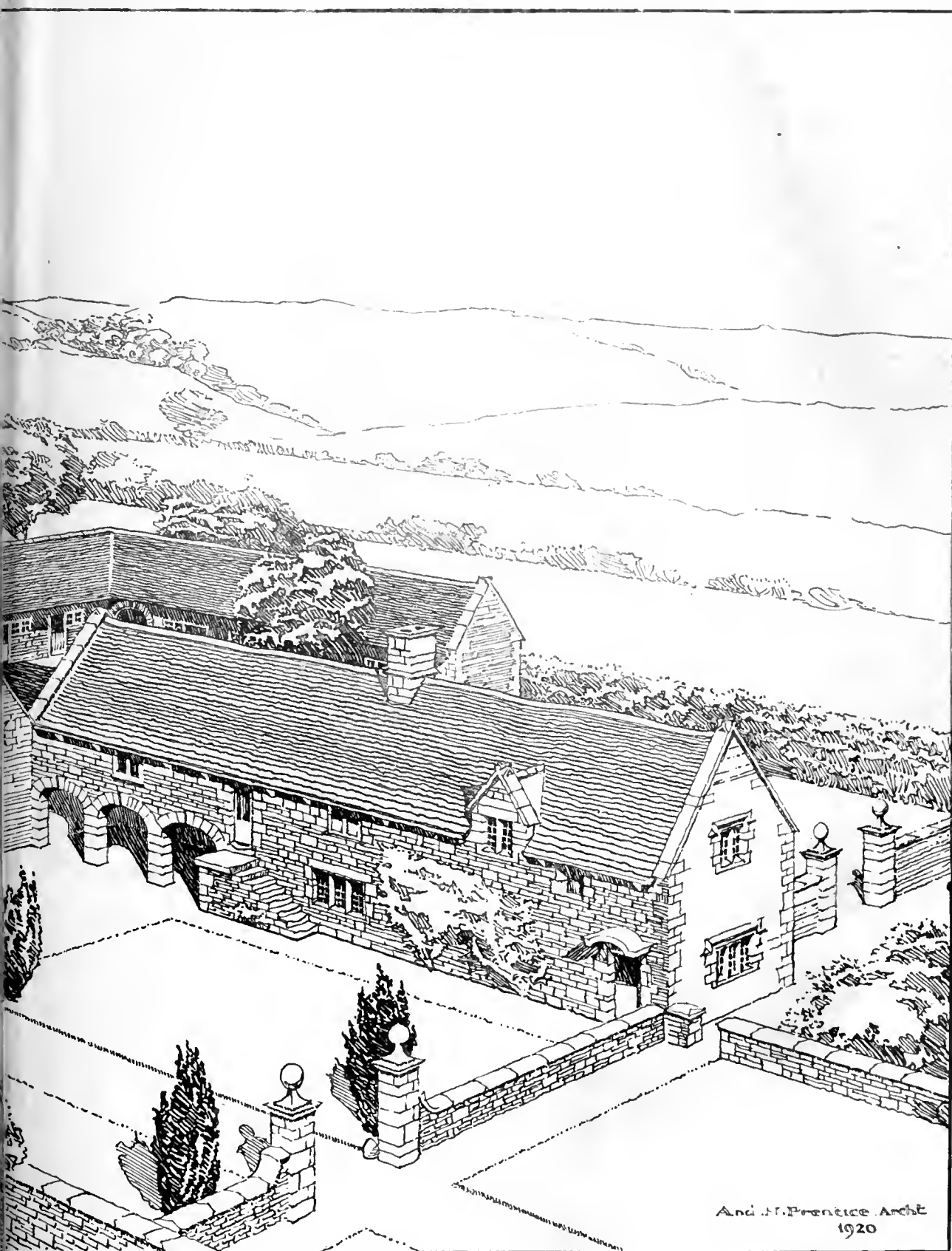
LLOYDS AND NATIONAL PROVINCIAL FOREIGN BANK, BOULEVARD DES CAPUCHINES, PARIS.
Mr. PAUL WATERHOUSE, M.A.Oxon., F.S.A., F.R.I.B.A., Architect.

NOTGROVE MANOR · GLOS
NEW STABLE BLOCK AND COTTAGE



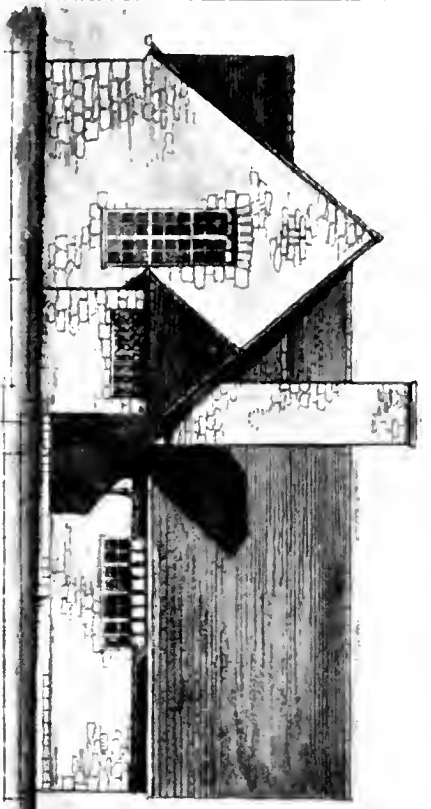
NEW BLOCK OF STABLES AND COACHMAN'S
Mr. ANDREW N. PR

S, MAY 28, 1920.

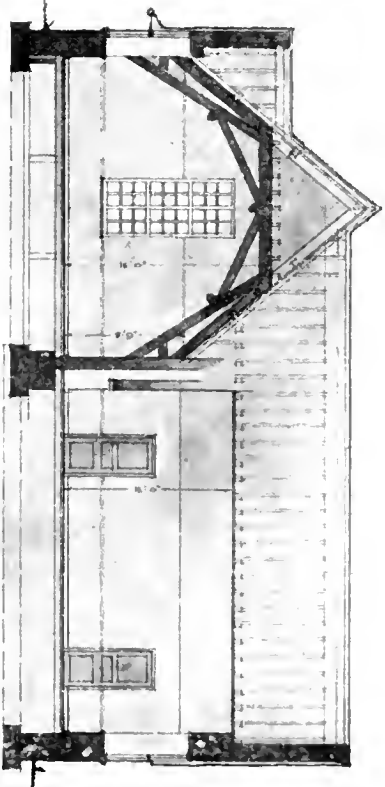


USE, NOTGROVE MANOR, GLOUCESTERSHIRE.
F.R.I.B.A., Architect.

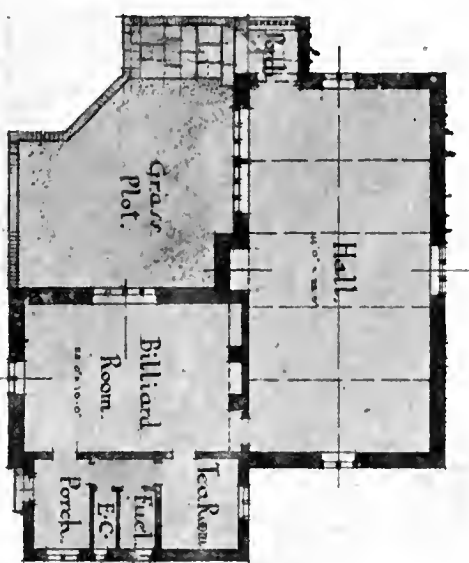
THE UNIVERSITY OF CHICAGO
LIBRARY



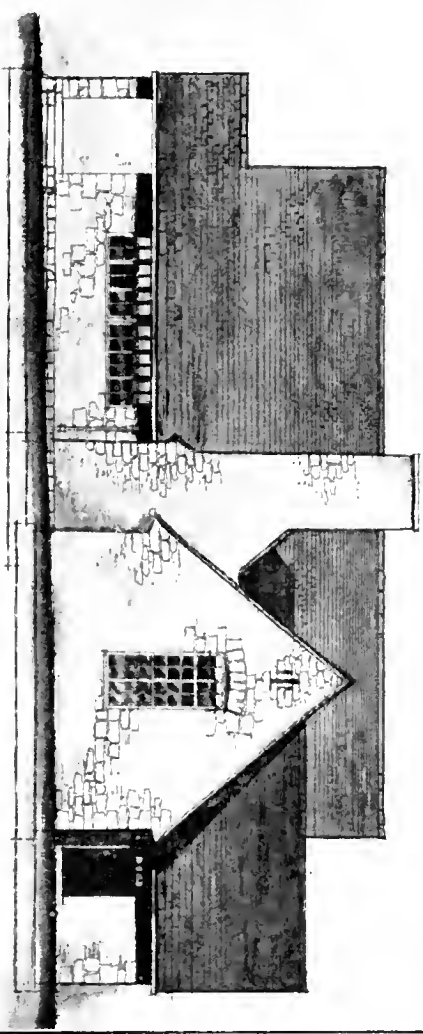
Elevation.



Section.



Plan.



Elevation.

Scale for Plan. 1 inch = 10 feet.

Scale for Elevation. 1 inch = 10 feet.

VILLAGE HALL, ITTON, MONMOUTHSHIRE.
 Mr. E. GUY DAWBER, V.P.R.I.B.A., Architect.

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NEW YORK, N. Y. 10019



EMPLOYEES' HOUSING PREMISES, BOW ROAD, LONDON, E.

Mr. F. Mutton Cashmore, Architect.



Correspondence.

DIRECT ACTION.

To the Editor of THE BUILDING NEWS.

Sir.—The extreme leaders of Labour are endeavouring to establish an industrial and political dictatorship. These wild men of the Labour movement, like their Bolshevik comrades in Russia, do not believe in democracy, so they are now claiming the right to dictate the home and foreign policy of the Government, and they propose to enforce their political demands by resorting to direct action.

We have the latest example of this impertinence in a manifesto just issued by the national "Hands off Russia" Committee, calling upon the workers to "down tools" for twenty-four hours "to force the British Government to make peace with Russia." This preposterous document is signed by several, including Robert Smillie, Tom Mann, James Winstone (South Wales Miners' Federation), Colonel Malone, M.P., J. E. Mills, M.P., George Lansbury, and the leaders of the Shop Stewards' and Workers' Committees.

These mis-leaders of Labour state that "the present House of Commons will not make peace with Russia unless it is forced to do so," and that "direct action released the Sinn Feiners who were in prison; direct action raised the railwaymen's wages, and direct action is the one thing of which the bourgeoisie is afraid."

This means, of course, that the trade unions are now going beyond the objects for which they were formed, and are claiming the right to use any means—legal or illegal—to enforce either industrial or political demands. They deny that they ought to be subject to constitutional and democratic procedure. In this they are following the instructions received from Lenin in a recent letter sent to his supporters in France and Great Britain. In this letter the Great Dictator says: "At all costs legal work must be combined with illegal in order to bring about systematically the strict control of the illegal party and its working class organisation over the legal activities."

If Messrs. Smillie, Mann, and company correctly voice the new aims of organised Labour, then the community must be prepared to resist this attempt to destroy representative government. We cannot allow the trade unions to usurp the functions of the State and to be a State within a State. Labour hopes soon to secure the return of a Labour Government; but if Labour repudiates the representative system, by what right do labour leaders expect the people to vote for them? If Labour attempts to enforce its ill-digested opinions upon us by "direct action," then it must abandon its claim to be fit to govern and make no further pretence to be inspired by democratic ideals.—Yours, etc., W. FAULKNER.

17, Heather Gardens, London, N.W.4.

PROFESSIONAL AND TRADE SOCIETIES.

EDINBURGH ARCHITECTURAL ASSOCIATION'S OUTING.—The Association visited Winton Castle, East Lothian, on Saturday.—Mrs. N. Hamilton Ogilvy granting permission. The members and their friends were received by Mr. W. S. Curr, Ninewar, Prestonkirk, who conducted the company through the historical apartments of the interesting edifice dating from 1620. The architectural ensemble of this fine old mansion-house, both in detail and design, has a close affinity to the architecture of Heriot's Hospital. At the conclusion of the visit Mrs. N. Hamilton Ogilvy courteously entertained the company to tea in the dining-room, where the party had the further pleasure of viewing the fine collection of old portraits. The company thereafter proceeded to Pencaitland church.

The houses being built at Blackburn were described at a meeting of the local trades council as presenting the appearance of a glorified snuff-box.

"FEUSOL."

"Feusol" is a new, immovable fire cement just put on the market by Messrs. Kerner-Greenwood and Co., of King's Lynn, which, writing after a most satisfactory trial, we feel sure will at once become as widely used as "Pudlo," which has, under the same auspices, established a world-wide reputation as the best preventive of damp in every form of construction.

"Feusol" is a light brown plastic fire cement, always ready for immediate use and very cheap, which combines the strength and adhesion of Portland Cement with the heat-resisting qualities of the finest fireclay. Portland cement, as we all know, sets hard with water, but crumbles under heat. Fireclay sets hard with heat, but has neither strength nor binding power. "Feusol" is immovable under heat, and its adhesion increases as heat increases.

For the lining of gas fires, for perfect union of firebricks, for firebrick construction, for building safes and strong-rooms, for filling large holes in firebrick surfaces, for fire-grate backs and cheeks, pointing round ranges, setting hearth tiles, repairing cracks in ovens and boilers, setting coppers, pointing boilers, jointing steam and hot water pipes, for furnaces, bakers' ovens, brick-kilns, retorts, refuse destructors, factory chimney bases—in short, for every purpose where the resistance to heat is an urgent need, "Feusol" will secure it. From the housewife who wants to save coal and finds brick backs come dearer than the cost of the fuel saved so frequent is their renewal needed, to the big contractor or factory owner who has long in vain sought to insure stability in structures and appliances where heat is the great foe to permanence, will come thankful acknowledgment of the merits of "Feusol."

Every reader who cares to test the truth of what we have said should send fourpence in stamps; to pay the cost of postage, when Messrs. Kerner-Greenwood and Co., King's Lynn, will send enough for a trial. In larger quantities the price is 6s. 8d. for 20 lbs. in handy paint kettles; 10s. 6d. for 40 lbs.; and 2½ per lb. in 1 cwt. casks.

STATUES, MEMORIALS, ETC.

HAWICK MEMORIAL.—At a meeting of the Hawick War Memorial Committee, last week, Provost Wilson, who presided, said the Executive Committee recommended that they should secure the bronze figure representative of "Youth," by Mr. A. J. Leslie, London, and which is at present being exhibited in the Royal Scottish Academy. The committee, he said, had an option on it at £750. The figure was exhibited in the Royal Academy last year, when the Chantry Fund thought of purchasing it for the Tait Gallery. It was unanimously resolved to purchase the statue, which will be placed on a pedestal on the Tower Knowe.

LINCOLN WAR MEMORIAL.—The Lincoln War Memorial Committee has at last decided upon a definite scheme and a site for a memorial to consist of a bronze figure of Victory, with a dying soldier lying at her feet, to stand in the Sessions House grounds near the main entrance. The architect is Sir Reginald Blomfield, R.A. The figure of Victory, 14 ft. 6 in. in height, will stand on a pedestal of Portland stone, 18 ft. 6 in. high, and 5 ft. 6 in. square, resting on a stone base 20 ft. square. The figure will hold above the head with the left hand a laurel wreath, which will increase the height by a further 3 ft. The right hand will hold that of a dying soldier lying across the feet. The pedestal will bear the City Arms, in relief, at the top, and a bronze plaque in the front with the inscription. The total cost of the memorial is estimated at about £5,500.

MILL HILL SCHOOL.—The war memorial at Mill Hill School is to comprise scholarships for the sons of those who have fallen, a new science school, and a gate of honour which is now being erected in front of the school house. The latter has been designed by Mr. Stanley Hamp, F.R.I.B.A., and will, it is hoped, be opened in October. It will contain the names of all old boys who served in His Majesty's forces, while those of the 184 who lost their lives will be specially commemorated. Old Mill-hillians are requested to send at once to the Bursar at the school a full record of their war service.

WATERPROOF AND ROTPROOF PAPER.

TESTS AGAINST MILDEW AND WHITE ANTS IN THE RAINS OF INDIA.

One of the most interesting and remarkable applications of Science to Industry is the treating of paper by the Dux Chemical Rot-proof Process. Ordinary paper before treated has a variety of properties and uses, but it has its limitations. It is not waterproof. It rapidly deteriorates in a damp atmosphere. The surface rubs up when wetted. In tropical countries heat affects it adversely. Exposed to ordinary wet weather conditions it soon becomes soft, and entirely loses its strength.

Paper treated as above is fundamentally changed. The material can now hardly be called paper at all. It has acquired new properties. It resists mildew absolutely. It has become waterproof. All insects fight shy of it. The surface is now tough and glossy, and of a pleasing colour.

The writer, who until recently lived in Western Bengal, India, was always interested in the physical conditions of the plains. The White Ant especially was his special study. Only those who have lived abroad can realise what a pest this creature is. Recently the writer was asked to test a large variety of Dux papers against white ants, and the physical conditions of the rains, i.e., from the middle of June until the end of September. Samples of Dux papers treated and untreated were placed side by side on the ground, some were placed partly in the soil, others were buried. The conditions were the worst imaginable. The white ants did their worst. The rains, together with the steamy atmosphere, did their worst. At the end of the three and a-half months' test the samples were examined in the presence of Mr. Ball Hill, A.M.I.C.E., Chief Engineer to the City of Calcutta. All the untreated samples had disappeared entirely, mildew and the white ants had destroyed them absolutely. All the treated samples, on the other hand, were intact. In the case of very thin paper a small hole here and there was found, but the thicker portions were undamaged.

The thinner varieties are used as waterproof packing paper. A stronger kind is ideal for stencils, waterproof labels, copying press sheets, etc., indeed, where conditions of damp and exposure prevail, these papers are wonderfully durable.

But the chief use to which Dux paper can be used is underslating, 1 ply for use on boards and 2 ply for open rafters. For many years this material has been used for this purpose, and with excellent results. A building with such underslating is absolutely watertight. What is more, the paper is easily laid, has no smell, and is practically imperishable. The 4-ply paper is so strong that an entire building can be made of it. For light portable buildings this material is admirable.

Dux paper in all its varieties should be better known. It is not expensive, and what is important in these days it is obtainable.

The annual general meeting of the Land Agents' Society will be held at 16, Bedford Square, W.C., on Thursday, July 8. It has been decided to revive the annual dinner, and it will be held on the evening of the date fixed for the annual general meeting.

The Ministry of Health has sanctioned the erection of 250 houses, the first instalment under the corporation's housing schemes at Hull, by the employment of direct labour. One hundred and twenty-five of the houses will be of the parlour type, with three bedrooms, at £940 each; 112 will be of the non-parlour type, with three bedrooms, at £750 each; and thirteen non-parlour, with two bedrooms, at £640 each.

The directors of Bell's United Asbestos Co., Ltd., have resolved, in view of the audited accounts to December 31, 1919, and after providing for Excess Profits Duty, to recommend to the shareholders at the general meeting to be held on June 15, 1920, the payment of a balance dividend of 1s. 6d. per share on the ordinary shares of the company, and a bonus of 1s. per share, which, with the interim dividend paid in October last, makes a total distribution of 1½ per cent. for the year. The amount to be carried forward is £26,046.

STANDARD STEEL BUILDINGS.

An article quoted by the *Technical Review* describes a method of constructing permanent fireproof steel buildings known as the Standardised Truss Unit System, the buildings being composed of a series of triangular steel units.

Among the advantages claimed for this system over the conventional methods of steel construction are that it makes possible the carrying of a permanent stock of structural steel cut to size, punched, etc., and ready for immediate delivery to the building site, and, since the buildings are designed in certain practical and standard sizes, no intricate or special detail operations of a costly nature and involving loss of time are required. Another point worthy of note is the economy effected in shipping this class of steelwork; it makes compact loads, and thus utilises the maximum capacity of railway vehicles, and, therefore, contrasts very favourably with the waste space evidenced in the transportation of ordinary structural steelwork. With the advantage of this economy in space there naturally follows decreased cost of transit.

The basic unit in this type of construction is a structural steel assembly of triangular shape. This unit has an altitude of 10 ft. and a base of 3 ft. 4 in., and weighs about 200 lbs. All units being exactly alike, they are used interchangeably in the construction of both roof trusses and columns. Structures built of these standard units are arranged in two heights—11 and 21 ft., and in roof widths of 20, 40, and 60 ft. Lengthwise the buildings are arranged on a basis of 20 ft. panels, or bays, making possible a structure which is any multiple of this dimension. There are no other interior columns in any of these buildings.

A decided departure has been made from usual practice in making the buildings with either vertical or sloping side walls, those with the sloping walls offering considerably greater floor space and, consequently, greater storage facilities in such buildings as railway goods sheds. Again, in the case of machine or erecting shops, the extra side area afforded by the sloping side buildings can be used for benches or machine tools, the position being ideal for precision work under the best lighting conditions, thus permitting the main floor space to be kept quite clear for erecting and other work.

The erection of such buildings is stated to be a simple and rapid matter, all connections being bolted, and every part of the framework can be handled easily by two men and raised to position with the aid of very light lifting tackle.

The author claims yet a further good feature for this type of construction in that the buildings are both permanent and, at the same time, portable. A building may be erected and later dismantled, and removed to another position without loss of material or undue expenditure of time and labour, and reconstructed in the same size, or some other size, as conditions may necessitate.—*Railway Review*, Chicago, March 20, 1920.

The annual general meeting of the Surveyors' Institution will be held in the lecture hall of the Institution, on Monday, May 31, at five o'clock, when the report of the council will be received, and the result of the election of officers for the ensuing year will be announced. The prizes awarded in the recent examinations will be presented by the president.

Lambeth Borough Council will not proceed further at present with the erection of houses on two of the sites chosen where seventy-two dwellings were to be built. Already the council have spent over £13,000 out of general funds on housing, and although application has been made to the London County Council for a loan the money has not yet been advanced. In the next six months further payments amounting to £100,000 will have to be made, and if the council proceed with the development of these schemes £250,000 will be required during the next year. This money cannot be met out of the general rate. A further scheme for 260 houses at Rosendale Road, Norwood, is estimated to cost over £250,000, but it is doubtful if the council will go forward with it. An emphatic protest has been made to the Minister of Health regarding the position in which the council find themselves.

Our Office Table.

The attempt to adjust the differences existing between the Birmingham City Council and the Birmingham builders, suggested by the president of the Birmingham Architectural Association, was made, as we said last week it would be, at a conference held at the Council House on May 19. The conference was held in private, but at the close an "agreed statement" was issued to the Press as follows:—Under the chairmanship of the Lord Mayor, a conference of representatives of the Ministry of Health (Mr. J. Walker Smith, Deputy Director of Housing, and Mr. Stephen Easton, Director of Production, with representatives of the Housing and Estates Committee and the Birmingham Building Trades Employers' Association) was held at the Council House this evening. After a prolonged discussion, an alternative proposal was put forward on behalf of the Housing Committee, which the representatives of the association agreed to submit to their members for consideration. It is proposed that a conference on points of detail will take place between the representatives of the committee and the association early after the Whitsuntide holiday. The conference lasted two and a half hours.

At the monthly meeting of the Incorporated Church Building Society, held at 7, Dean's Yard, Westminster, on the 20th inst., Mr. G. Cowell, F.R.C.S., in the chair, grants were made towards enlarging the Church of All Saints, Plymouth, £150; and towards repairing the churches at Avon Dassett, S. John the Baptist, Leamington, £40; Brimscombe, Holy Trinity, Glos., £25; Upper Holloway, S. James, Middlesex, £75; and Barnsbury, S. Thomas, Middlesex, £50. A grant of £75 was also made towards adapting S. Francis' Mission Church, Bethnal Green, Middlesex. £360 was also paid towards small repairs to thirty other churches. The monthly meeting was followed by the annual general court, at which the following gentlemen were elected to fill vacancies on the committee:—The Ven. Archdeacon Tait, the Rev. Preb. F. N. Thicknesse, Walter F. Richmond, Esq., and Samuel Gurney, Esq.

The strike of bricklayers engaged on a housing scheme at Hayes last week, which was referred to in the House of Commons, has, remarks the *Times*, some special points of significance in relation to the generally unsatisfactory condition of the supply of labour for building. The facts are that a number of bricklayers ceased work on account of the fact that some of the men in a gang or "team," working under a foreman named Burgess, were laying an average of 700 bricks a day, as compared with an average of 350 in other teams. Burgess, himself a strong trade unionist, had apparently committed the sin of laying bricks, and a second complaint was that a section where the foreman did no work suffered an injustice thereby. A further complaint was of incivility by one of the servants of the contractors, the firm of Sir Robert McAlpine and Sons, which, when investigated, resolved itself into a statement that a request for the removal of Burgess should be brought forward in the recognised form. The firm refused to dismiss Burgess. No complaint was made by the "team" under Burgess that he over-drove them, and in fact the men in his gang continued working with him, while other labour has been obtained to carry on the work of the men who left. The men's union officials have taken up a neutral attitude on the matter, after one of them had assisted in the investigation of the complaints. Another peculiarity of the situation is that the men raised an objection to the firm undertaking contracts for building in concrete. This suggests that the bricklayers are taking alarm at the possibilities of concrete building, much of which can be done with a small percentage of skilled labour. Contractors, on the other hand, are beginning to come to the conclusion that if they continued to experience difficulty

in building in brick owing to trouble with bricklayers there will be no alternative but to build in concrete.

The dilapidated parish church of Badsey, in the vale of Evesham, had no vestry prior to its restoration some years ago by Sir T. G. Jackson. The Vicar and Churchwardens of Badsey were not altogether satisfied, and objected to the appearance of the new chimney which surmounted the junction of the nave and choir exterior because, in their judgment, it looked out of place. Sir Thomas pointed out that the heating of the building was a modern necessity, and time would bring the old and new work all together. "As a matter of fact, this chimney long ago became nicely toned down by its native soot, and is now practically unnoticeable." So, in his book just published, "Grain and Chaff from an English Manor," Mr. Arthur H. Savory, who was churchwarden when this restoration was done, assures his readers.

Major C. E. Inglis delivered the first of a series of lectures on the evolution of large bridge construction before the Royal Institution on Tuesday afternoon. Nowadays for artistic effect the engineer depended, he said, on sheer simplicity and truthfulness of design. The era of long-span bridges did not occur till well on in the Nineteenth Century. There were five types, the bridge with discontinuous spans, with continuous span over supports, the cantilever, the arch, and the suspension. Wind pressure in connection with long-span bridges was of enormous importance. The old Tay Bridge was considered to have collapsed owing to its possessing insufficient resistance to wind pressure, and consequently in building the Forth Bridge the Board of Trade insisted on wind resistance of 56 lb. per square foot, although 30 lb. was proved to be sufficient. With regard to the continuous span, no engineer would now risk his reputation by using it when he had at his hand the cantilever bridge, which had all the virtues and none of the failings of its parent, the continuous span. If an engineer were "out" for the longest span he must use the suspension bridge, next to that the arch, and next to that the cantilever.

Bricklayers who threw up their work because their mates were laying too many bricks a day were discussed at question-time in the House of Commons on the eve of the adjournment. Dr. Addison said he was informed that some bricklayers employed on the Hayes housing scheme demanded that the contractors should dismiss one of their foremen, who was a trade unionist. The only substantive reason they gave was that the section in his charge were laying a much larger number of bricks than any other. The contractors refused to dismiss the foreman, and the protesting bricklayers left the job. The section complained of were laying 700 bricks a day, and the men were not unduly pressed. Other sections were laying 350 bricks a day. Dr. Addison said that the headquarters of the union were not countenancing the men's action. Are they discountenancing it?

Architecture, remarks our contemporary, the *Irish Builder*, is always conspicuous by its absence at the Royal Hibernian Academy, now more so than ever. For years past the illustrations of architectural works have steadily dwindled, until this year there is but a solitary example, a charming little water-colour by Mr. R. Caulfield Orpen, R.H.A., a proposed new chapel at Limerick Cathedral, by Messrs. Orpen, Dickenson, and Conor O'Brien. In addition to the recognised architectural exhibit, the drawings submitted in a recent students' competition organised by the Architectural Association of Ireland were on view, the subject being an art centre for Dublin. The designs are creditable, but our contemporary is doubtful of the educational value in design of these competitions in ambitious subjects.

The Ministry of Health recommends for the destruction of the house fly the use of tapes or wires smeared with a mixture of castor oil and crushed resin. In Italy during the war a small proportion of rum was added to this mixture by the British Army authorities, and proved most effective.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House.

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Strand, W.C.2

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The Metropolitan Borough of Stepney's Proposed Municipal Buildings, Arbour Square, E. Messrs. F. G. Briggs and Arnold Thornely, F.R.I.B.A., Architects.
Semi-Detached Cottages for Various Districts. Messrs. Alfred W. Cross, V.P.R.I.B.A., and Kenneth M. B. Cross, B.A., Architects.

Currente Calamo.

Our own modest tribute to Thomas Hardy, the greatest story-writer of his time, who attained his eightieth birthday last Wednesday, is paid in proud remembrance that some of his earliest contributions were to our own pages; and that, while Architecture lost what mankind has gained, the Mistress Art may justly claim to have enriched her early disciple with no mean addition to the capability with which his local colouring of the scenes amid which the dear Wessex folk he has immortalised play their parts, has been achieved. May he live many more years yet, and may the predominantly English peasantry he has so piquantly and powerfully portrayed endure throughout all generations; if, alas, only in contrast with the town-dwellers and cosmopolitan self-seekers, the degenerate victims of what Dean Inge last Monday truly enough stigmatised as "Camouflaged Bribery"!

The first master builders' lock-out has been proclaimed. The building trade operatives at Ongar, Essex, failing to agree among themselves on the question of uniform hours, the master builders last Saturday exhibited the following notice: "Owing to the impossibility of carrying on business under present conditions, these works will be closed until such time as definite arrangements can be made by the men for working hours." The sole cause of the trouble is that some men favour a start at 6.30 a.m. with a correspondingly early knocking-off time, and others prefer to begin work an hour later and finish correspondingly later. Other men are bent on having Saturday off and working longer hours on the other days. A little leisure, perhaps, may enable work to be recommenced!

The high and mighty attitude of the clerical members of the Commission which has doomed the City Churches, at the interesting lecture given on Tuesday by Mr. Mervyn Macartney on the nineteen threatened churches, was well followed by some pertinent information which should be noted by all who, with Sir Aston Webb, have still an "open mind" about the matter. Bishop Brown wanted to know whether "the Church of

England was to make a present to the Corporation of London of £1,700,000?" And Lord Phillimore said, "City men had wits and legs, and if St. A. was closed, while St. B., a hundred yards away, was open, if they were really religious people they would go to St. B." The truth about the whole matter is, as Mr. Freshfield, the President of the Church Preservation Society, pointed out, that those churches were built after the Great Fire by taxation, and supported by rate instead of tithe. That for many years sinecurist clergy have emptied many of them is a poor plea for their appropriation by the diocese of London for the building of more churches in Greater London, in regard to which there is little guarantee that the religious needs of the population will be better apprehended. The resolution that was passed is, we hope, a reliable indication that these memorials of the past will be preserved, and remain for centuries to come more wisely and beneficially used for the real benefit of the City and the many thousands who daily throng it.

"Reasonable wear and tear excepted" are the usual concluding words in a covenant by a tenant to do the interior repairs of a house. There has, however, never been any definite decision as to the legal meaning and effect of this common clause. It was again argued over in the recent case of "Citron v. Cohen" without any result, the judgment going upon another point. Still, the case is of general interest, as similar facts often arise. Plaintiff landlord sued the defendant (the tenant of a house at Clapton) for breach of his covenant to "keep the interior of the premises in good and tenantable repair, and to deliver them up in good and tenantable repair" on the expiry of the term, "reasonable wear and tear excepted." The only real issue was as to the defendant's liability to repair damage done to the interior rooms by the water coming through from a pipe outside which had burst. Admittedly the tenant was not bound to mend that pipe, nor had he any legal power to do so. The landlord, as usual, had given no covenant to do anything, and though notice was sent him, he did nothing. The position was in law that neither party was bound to repair this pipe,

which was the offending cause. Could the tenant be made to pay for the consequences? Fortunately, Mr. Justice Sankey got away from all technicalities and came to common sense, and so held that, though the landlord was probably not bound in law to mend his own broken pipes, yet he could not be allowed to stand by doing nothing and then make the tenant pay for the damage his own pipe had caused. The landlord lost on this claim, getting judgment in other items admitted, but without costs.

The ninth annual exhibition of the National Portrait Society is being held at Messrs. Agnew's Gallery, 143, Old Bond Street. There are only 45 exhibits, and, owing to restrictions of space, the show is limited to members and portraits of a limited size. Sir William Orpen, A.R.A., sends a drawing of "The Lady Evelyn Herbert" (1). Miss Flora Lion an oil of "Lady Lowther" (3); Mr. William Rothenstein one of a "Study for a Portrait of John Drinkwater" (4). Mr. Gerald F. Kelly is represented by "A Seville Chorus Girl" (9) and "Antonita va a los toros" (17). Mr. William Strang, A.R.A., sends "The Gipsy Girl" (14), "The Mantilla" (38), and "A Piece of Silver" (41). Mr. Augustus John sends "The Green Ribbon" (23) and "Eileen" (24). One of the best things shown is the portrait of "Kinnerton Parkes, Esq." (27) by Mr. F. Derwent Wood, R.A. Another is Mr. Glyn Philpot's "The Lord Basil Cecil" (31), and "The Hon. Mrs. Edward Packe" (35) equally deserves mention. Mr. Ambrose McEvoy's only contribution is "The Hon. Pamela Smith" (33). Sir John Lavery shows "A Moorish Woman" (37). Mr. Philip Connard has two portraits, one (11) not named and the other "Lorna" (15).

Much has been written and talked about on the question of housing. The Prime Minister has frequently declaimed on the apathy and selfishness of the Bricklayers' Union. Without houses, as Mr. Charles Markham, of the Broad Oaks Ironworks, Chesterfield, points out in the *Times*, the development of this country must remain in stagnation for years to come. The companies he is connected with require some 3,000 to 4,000 houses at the present time, not only for future developments,

but to relieve the existing scandalous state of overcrowding. The following figures reveal the attitude of the bricklayers and their labourers to the public at the present moment. On a housing scheme begun last February some 445,000 bricks have been laid. The number of hours worked by bricklayers and bricklayers' labourers was about 17,000. The wages come out to over £3,000. These figures work out at 26.32 bricks per hour for a bricklayer and his labourer. In other words, it means rather less than half a brick for two men to lay in a minute, and the cost of laying one ordinary brick works out at 1.64d. At this rate of progress practically nothing is going to be done this year to ameliorate the housing shortage. Naturally, the cost of laying bricks at anything approaching the present exorbitant conditions must necessarily make the economic rental of the completed house a very high one, and creates a false standard of living for the community generally who have to live in them.

The fifty-third annual Convention of the American Institute of Architects at Washington was marked by a good deal of interesting discussion of the various problems which, if occasionally under other phases, present themselves here for solution. One group of delegates, says the *American Architect*, though not on the Convention floor, were much taken with the idea of a National Academy of Architecture. Why should not the American Institute of Architects elect from its membership a group of, say, one hundred men who would become the founders of the National Academy of Architecture? Then, why not reorganise the Institute as The Institute of American Architects with a governing body composed of a council of one member from each State? A president could be elected from the group to preside over the Institute. The Chapters as Chapters to be reorganised as the nuclei of State Societies. Every registered architect in the country would be eligible to the Institute, his term of membership contingent on his good standing: his dismissal for cause from the Institute to act as revocation of his registration. We do not quite follow the idea, but a Royal Academy of Architecture here might possibly receive a little more recognition of the Mistress Art than it gets at Burlington House.

The London District Council of the National Federation of Building Trade Operatives proposes to supply us with houses on the lines of guild socialism. That is to say, the guild, which will consist of the trade unionists working in the building industry in London, will be self-governing, and will itself undertake full responsibility for the work. It will work for any client, public authority, or private individual, and will be paid a price either arranged by contract, or calculated on a cost-plus basis. It will engage and pay its own architects, engineers, and so on. If it can raise working capital, over and above what it can raise by subscription from its own members, it will raise it as a loan

bearing a fixed rate of interest, and not as share capital entitled to dividends and a right to control the undertaking. The workers who are members of the guild will be paid the standard rate of wage, "whether at work or not"—mostly "or not," we fancy, as long as the subscriptions last! The scheme, if ever put seriously into practice, will be a most interesting experiment. In the meantime, a comic litch has occurred in a similar scheme at Manchester. The Ministry of Health appears to be unable to understand that the object of the guildsmen is not to make a profit but to build houses as cheaply as possible, and at the same time to pay proper wages to the workers employed. It has, therefore, been trying to press a profit on the guild. Perhaps after State subsidies to builders at the cost of the taxpayer Dr. Addison felt that the altruism of the noble-minded guild builder must be made as much like the much-maligned "profit" of the miserable capitalist as possible—and the money lasts!

INDIGENOUS AMERICAN ART AT THE BURLINGTON FINE ARTS CLUB.

The small but very interesting exhibition now on view at the Burlington Fine Arts Club may certainly claim the distinction of being first in the field with a display of an American art which owes nothing to any other continent. Here, and in America, the students of the archaeology and ethnology of the indigenous races of the New World have had much to say about its inhabitants and their origin and doings, but their autochthonous art, viewed as an art, is here to be seen, grouped together, for the first time in this country. It will, at any rate, help the student one of these days to pursue his investigations further, when the really remarkable collections in the British Museum are shown to better advantage; and, in the meantime, it will enable the sometimes scornful dilettanti to insist that, though indigenous, it is not art; while, on the other hand, the believers in the Asiatic origin of all they will see may find a good deal which they will doubtless claim as part evidence in support of some of their rather frail theories, and may, perhaps, respond to the caution of the writer of the prefatory note to the catalogue, in which they are begged "not to mistake the beak of a macaw for the trunk of an elephant, or pile upon so slender a foundation a mass of theories that would need the whole world of science to substantiate."

The more broad-minded, who love the open road of new impressions, and who believe that the methods and canons of Art, if untrammelled by foreign traditions, are governed by local conditions and the outcome of the inherent genius of the country, will, at any rate, admit that what is shown avoids the commonplace and the merely pretty, and certainly has a near relation to the primitive. And they will be grateful for the very lucid introduction to the catalogue by Mr. T. A. Joyce, M.A., O.B.E., in which the early history of America is summarised, as inferred from the actual results of archaeological exploration combined with the native traditions preserved by the early chroniclers.

So far as excavation on a scientific line has been undertaken, it seems probable that the earliest cultural development took place in the new thickly-forested

central low-lying region of Chiapas, Guatemala, and Northern Honduras, in which are found groups of stone-built ruins, covered with sculpture and bearing dates expressed by a hieroglyphic script not yet deciphered, but which survived in Yucatan at the time of the Spanish conquest among a people speaking a dialect of the Maya language. The period, therefore, covered by these buildings is known as the Early Maya. So far the dates on these monuments are thought to run from the commencement of the Christian era to about the end of the third century A.D., the end of this period being determinable with some accuracy, but not the beginning. At the beginning of the fourth century A.D. dated monuments ceased, the centre of culture shifted to Yucatan, where are found buildings and an art obviously derived from the Early Maya, but exhibiting traces of degeneration. This—the Middle Maya period, lasted till about the end of the tenth century, when a change becomes evident, due to influences from the valley of Mexico, whence large bodies of the so-called Toltec had been driven by cultured invaders from the north. The Late Maya period of the eleventh century, marked by rapid degeneration of art and architecture, closed with the Spanish conquest; and during the Middle and Late periods architecture seems to have become a lost art, but the minor arts, especially pottery, continued to flourish.

Though the Early Maya culture established itself most markedly in Yucatan, Maya influence spread westerly and north-westerly, and ultimately from Oaxaca to the Mexican valley, where circumstances which are detailed caused it to take root and flourish, but as something altogether specifically different. In Mexico the so-called Toltec period had its beginning about the end of the eighth century, and, in spite of political upheavals, no material changes took place till the close of the fourteenth century, when the Aztecs became the paramount power, absorbing the culture they found in the Valley, but relying on their tributaries for works of art, such as, for instance, the pottery made in and around Cholula, an example of which is seen in Case D, No. 17. Mention is made, in the introduction, before leaving Mexico, of the Huastec, a people of primitive Maya stock, of the north of the Totonac, in and around the Panuco Valley. Though they have left stone sculptures of an archaic and interesting type showing distinct affinities with certain sculptures of the early Maya period, of which a fine series may be seen in the British Museum, they were evidently cut off from their relations with Guatemala, since not a single glyph has been found in their country. The sole specimen of their art is a single vase of characteristic form, Case D, No. 32.

Little is said about Nicaragua, Costa Rica, and Panama. Passing down the isthmus, there is a regular transition from the culture of the Mexicans to that of Colombia and Peru. The influence from the north appears to have been progressive, and that from the south retrogressive. Not that the art of either of the three countries was insignificant. Some of the tribes of Western Nicaragua and North-Western Costa Rica were adept stone-carvers and good potters. From central Costa Rica came polychrome pottery of considerable merit; while the Talamanca of Southern Costa Rica and Western Panama were skilled workers in gold and stone, and their pottery is some of the finest in America.

South American art manifests a complete absence of any form of writing or

indications of date; and traditional history is practically confined to the rise and growth of the Inca empire. But owing to the absence of tropical forests more scientific excavation has been possible. Two opposing forms of culture, one developed from highland plateaus and valleys of the Andes, well watered, and rich in stone, the other from the rainless coastal districts, where stone was scarce and agriculture difficult, seem to have dominated artistic development. In the earliest period three contemporary culture-regions may be distinguished: the first, the Proto-Chimu, covering the northern half of the Peruvian littoral; the second, the Proto-Nasca, the southern half; and the third, known as the Tiahuanaco I. period, with megalithic masonry and rude but forcible stone carving, which about the end of the second century blossomed forth into the period known as Tiahuanaco II., which gradually spread throughout the upland regions of Peru and elsewhere, and the last degenerate phase of which disappeared by the end of the eighth century A.D. Then came three centuries of almost complete stagnation; but the commencement of the twelfth century saw the rise and expansion of the Inca people, who at the time of the Spanish conquest had extended their sway over the whole country west of the great forests, embracing the modern States of Ecuador, Peru, Bolivia, and parts of Chile and North-West Argentina.

It is, of course, possible, as is pointed out, that the inter-relation of the various phases of American art above outlined may be more far-reaching than can yet be known. Communication by land between the northern and southern continents was difficult, but coastal voyages were possible, and it seems certain that the tribes on the southern littoral of Central Panama had heard of the Peruvian empire, and were able to tell Vasco Nunez de Balboa in which direction to sail to reach it years before Peru was discovered by white men.

Mr. Joyce's remarks on the technical side of American art are much to the point. First, he reminds us that none of the pottery is wheel made; in fact, the principle of the potter's wheel was absolutely unknown throughout the whole of America. The Late Maya, the Aztec, and the Chimu people made considerable use of moulds, but the pots of the earlier and finest periods, notably the Proto-Chimu and Proto-Nasca, were built up entirely by hand. Again, the Americans in pre-conquest days were living under conditions which approximated very closely to those of the Stone Age. Gold, of course, they knew and worked, and in Peru, silver also; but both of these metals are useless to the craftsman except as materials. Copper, often in the form of an accidental bronze, was also known, but was too rare and valuable in Mexico and Central America to be used for anything but ornamental purposes. In Peru, apart from ornament, it appears to have been utilised for agricultural implements, weapons, and small knives, but the great bulk of the sculptured work, and certainly stone-dressing and stone-carving, must have been performed with stone tools. Attention is called to the perfection of the results attained by the Peruvians in textile art. The earliest tapestries were woven on a simple frame, without the use of a heddle; in later times a single heddle was used for ordinary cloth, or two, if a double-faced cloth with two warps and two wefts was under construction. Yet, with this simple machinery, Peru produced an enormous variety of techniques; in fact, Mr. Joyce

insists that, if the whole of the textile art were wiped out from the Old World, it could be reconstructed practically in its entirety, without the loss of a technique, from a study of the textile products of Ancient Peru.

The eighteen cases of exhibits have been excellently arrayed, and every object can be examined with ease. Case A contains exhibits from North-West America, largely lent by the Pitt-Rivers Museum, Oxford, including a curious ivory cylinder used as a receptacle in which the Shamanistic priest confines the wandering soul of a patient, whose sickness is attributed to its temporary absence. Cases B and C are similarly filled. Case D is devoted to Mexico, mostly pottery. Case E has some interesting specimens of Peruvian tapestry, and some stone carvings over the mantelpiece in stone, green basalt, and volcanic breccia. Case F is mostly given to various Central American specimens of jade work and pottery. There are also two large photographs, one of a huge stone building at Chichen Itza, Yucatan, with a façade ornamented with a mosaic design consisting in the main of colossal masks of the rain-god; and the other of a stone monolith from Guatemala carved with five elaborate glyphs, below are two columns, each of eight glyphs of normal type. The contents of Case G are wholly pottery from British Honduras and Guatemala. Case H contains a fine photograph of a stone monolith at Quirigua, Guatemala, representing a standing priest or deity, supported by the mask of the sun-god. Another photograph shows a portion of a similar but smaller photograph from Copan, Honduras. Case I is wholly occupied by a very unique dark green Diorite mask representing a human face, possibly worn as a breast ornament. Case J is filled nearly entirely with Central American pottery. Case K is occupied by a very fine Early Mayan beaker, the design on which represents a visit paid to a chief by some inferior, who is offering what may possibly be a pouch filled with copal incense. Three attendants also figure, and the vacant spaces in the field are filled with some well-drawn glyphs. Case L shows quite a number of Central and South American gold and silver objects, among them a gold ornament for a coronet in the form of a human figure with two heads and elaborately decorated ears. In each hand is a bar to which are attached a flat semicircle and a calix-like pendant resembling a Puritan hat. In Case M is some good pottery from Ecuador and a well-worked copper plaque from North-West Argentina, the design representing a human figure clad in an ornamental tunic and with the head crowned with an open-work head-dress. Cases N, O, and P show mostly Peruvian pottery, much of it of fine design and really wonderful execution. Case Q has some Central American pottery and a couple of masks, one in pale green jade and the other aventurine.

The manuscripts in Case R will attract much interest. No. 1, the Codex Fejérváry Maya, is a little over 13 feet long, formed of four strips of deerskin, folded in zigzag fashion, so that the pages have each a length of about 6½ ins. One side is covered with a white pigment on which paintings, outlined in black, are executed in red, greenish blue, yellow, and black. One side deals with the night world, and is magical in character. The other is divided, pictorially, into two registers, the upper one showing two series of gods presiding over the five successive synodical revolutions of the planet Venus, with the day signs on which the

planet rises. The lower register is similar in character, though not in detail. There are also facsimiles of the Mexican manuscripts known as the Zouche Codex, the Codex Peresianus, and the Dresden Codex.

The last exhibit, on the catalogue table, is a Diorite carving from Costa Rica in the form of a crouching human figure holding under its right arm a human head; the eyes are shown as simple excavations, and may have been filled with inlay; the ears are represented as furnished with ear-plugs, and the limbs are indicated in low rounded relief.

THE PROSPECTIVE COMPETITOR METHOD OF VALUATION OF PROPERTY.*

By M. L. BYERS, M.A.M.Soc.C.E.

(Continued from page 408.)

The owner of every regulated enterprise is entitled to earn the same profit as the same amount of capital, intelligence, and industry would normally enable him to earn in the field of free and open competition.† Therefore, it becomes of fundamental importance to establish the principles under which commodity selling price is determined in the open field of free competition.

8.—THE PRINCIPLES GOVERNING FREE COMPETITION—THEIR APPLICATION TO VALUATION OF A MONOPOLY.

Let us suppose some community is served as to some commodity by a producer whom we will call briefly the A. and B. Company. This company has been in the field for years and has no competition. Local conditions do not prevent competition, and the commodity price is not limited by the public's ability to pay.

Certain capitalists, whom we will call the X. Y. Company, are looking for a favourable opportunity to make investment of their surplus capital. They, of course, have the range of the entire field of investment, regulated and unregulated, foreign and domestic, from which to choose; they will enter that field which, on investigation, gives promise of offering the greatest inducement as to profit, risk considered. Among others, the field occupied by the A. and B. Company comes under their consideration. Their decision as to whether or not to become competitors of the A. and B. Company will be governed by the answer which they will accept to the following question:—

"Considering the difficulty of establishing a new enterprise in competition with an old-established concern, will it be possible, within a reasonable period of time, for such new concern to create a more than normally profitable business, considering the amount of capital which would have to be invested?"

As to the amount of capital necessary to be invested in the proposed new enterprise, the X. Y. Company realises the following:—

1. Neither the amount of money which it was necessary for the A. and B. Company to invest in its plant, nor the profitability of that enterprise, has any bearing on the situation.

* This paper was not presented for discussion at any meeting of the American Society of Engineers, but written communications on the subject are invited for subsequent publication in *Proceedings*, and with the paper in *Transactions*. We reproduce the main portion, because, although conditions here may differ in details, it cannot but interest surveyors and valuers here at the present time to study the conclusions arrived at by a leading American authority.

† To deny this is to establish one of two conditions: If a greater return is allowed, the public is assessed a greater than normal charge for service rendered. If the right to earn at least this amount is denied, and it becomes known that such is the rule, capital cannot be enticed into the enterprise, and it will become dependent on Government ownership or will be destroyed. For it is an unquestionable fact that liquid capital is free and will be invested only where it can obtain at least the normal rate of return, risk considered. The entire field of investment in freely competitive enterprises, at home and abroad, is open to it at all times. It cannot be coerced into entering a regulated field where it will be compelled to accept less than the normal return obtainable in the competitive field.

2. The X. Y. Company will be obliged to pay present-day prices for the land, labour, and material entering into the construction of its plant.

3. The possible volume of business is limited in amount; also this total available must be divided with the A. and B. Company, already in the field.

4. The A. and B. Company cannot secure commodity prices higher than those which the customer can afford to pay; the X. Y. Company cannot secure prices higher than those of the A. B. Company.

5. In determining the total amount of capital which the X. Y. Company must invest in its proposed enterprise, there must be included not only the actual expenditures for construction, but also the loss of a normal rate of return on its expenditures during the construction period and during the lean years the "development period" which must follow, during which its volume of business is being built up to a sufficient density to enable the normal rate of return to be earned on the entire investment.

One of the most common causes of failure of business concerns is insufficient capital; the insufficiency is all too frequently caused by under-estimating the capital requirements of the developing period and by failing to provide adequately for contingencies.

In determining the amount of capital necessary in the competition with the A. and B. Company, the X. Y. Company would ordinarily prepare its own plans, estimate the purchase price of the land prospectively required, estimate the construction and operative costs of the prospective plant, etc., in addition to estimating the volume of business and the unit selling price probably obtainable.

As a matter of convenience, however, the X. Y. Company might conclude that it could obtain practically the same construction-cost and operating-cost figures by taking the estimated cost of reproduction of the A. and B. Company's plant under present-day conditions and by using the A. and B. Company's unit operating costs. Herein lies the sole economic justification for accepting "cost of reproduction" as a major element in the determination of value. The A. Y. Company would still be obliged, however, to make an independent estimate, not only of the amount of business which it, the X. Y. Company, as a competitor, could secure, but also of the capital cost to it of its development period under these conditions; it could not substitute A. and B. Company data for this purpose and obtain acceptable results.

In the field of free competition, it is the conditions facing the prospective competitor and not the cost of the existing property which control commodity selling price and, consequently, profitability and value of the latter. The value of any unregulated individual enterprise bears no necessary relation to its cost. For illustration: The cost of a manufacturing plant constructed in the heart of Alaska would be much greater than that of a duplicate plant constructed on a railroad in the State of New York; but the profitability of the New York plant, and, consequently, its value, would probably be much greater than that of the Alaska plant.

Consideration of the preceding illustration of the working of competition in the regulation of commodity price indicates as follows:

A. The fair commodity selling price at the time of investigation and in the field occupied by the A. and B. Company is that which is just sufficient to permit a prospective competitor as the X. Y. Company—a normal rate of return, risk considered, on its necessary capital outlay, this being based on a development period not exceeding that reasonable time which capital would be content to wait for a fair return. For this is a free field, wide open to all competition; this commodity price neither invites competition nor repels it; a higher price established by the A. and B. Company would attract competition, while a lower price would repel it.

B. The measure of fair value of the A. and B. Company is its profitability, present and prospective, at this fair commodity selling price just sufficient to permit a

prospective competitor to earn a normal rate of return, risk considered, on its necessary capital outlay.

In valuation in the non-competitive fields, it is proper, therefore, instead of constructing a theoretical "reproduced property," as is sometimes suggested, to construct a theoretical "prospective competitor." Thereby the conditions governing commodity price in the competitive fields are simulated and the way is thus opened to estimate fair commodity price and fair value of the property under valuation.

It is to be noted that the illustration, and, consequently, the principles deduced therefrom, refer only to the case where the existing company has no competitor; in other words, it is a monopoly, though able to remain so only by not charging unfair prices for its commodities.

9.—METHOD OF ESTIMATING THE FAIR VALUE OF AN ENTERPRISE SUBJECT TO COMPETITION.

Where the valuation of competitive properties is at issue, the same principles can be applied by first considering all the competitive properties as a single unit, such unit being, of course, a monopoly of the type used in the illustration. In this manner, through resort to the use of the prospective competitor for this monopoly, the fair commodity price and the sum of the fair values of all the competitors are obtained.

The problem still to be solved is, having estimated the sum of the fair profitability and of the fair values of the properties regarded as a unit, and having records showing their present and past individual operating statistics, how to find their individual fair values.

The first step is to compare the sum of the fair profitability with the sum of the normal actual profitability and ascertain the percentage by which the actual must be raised or lowered to equal the fair profitability. Next, apply this percentage as a correction to each individual normal actual profitability in order to obtain its fair profitability; from this, compute fair value by capitalising at the normal rate of return, risk considered, in such industry. For example, three railroads—A, B, and C—are in competition in a certain district; they have present gross earnings of 10,000,000 dols. and net earnings of 4,000,000 dols. divided between them, as shown in Table I.

TABLE I.

Road. (1)	Actual gross. (2)	Actual net. (3)	Fair net. (4)	Fair value at 6 % (5)
A	\$ 2,000,000	\$ 800,000	\$ 1,000,000	\$ 16,667,000
B	3,000,000	950,000	1,250,000	20,833,000
C	5,000,000	2,250,000	2,750,000	45,833,000
Total	10,000,000	4,000,000	5,000,000	83,333,000

Assume that valuation indicated that the total fair profitability of the three railroads should be 5,000,000 dols. instead of 4,000,000 dols. In order to increase the net of 4,000,000 dols. to 5,000,000 dols., it will be necessary to increase the gross earnings 1,000,000 dols., or 10 per cent., this being brought about by a 10 per cent. raise in the general rate level. Adding 10 per cent. of its gross earnings to the present net earnings of each railroad gives the fair net, as shown in Table I., column 4. This amount capitalised at 6 per cent. indicates a fair value, as shown in column 5. If an individual rate, being too high is lowered, this merely requires that slightly more than 10 per cent. be added to the other rates to produce the necessary fair gross earnings.

10.—ASSUMPTIONS AND MODE OF PROCEDURE IN THE DETERMINATION OF THE FAIR VALUE OF A MONOPOLY RAILROAD.

In devising the various assumptions which must be adopted in the "competitor" method of estimating fair value, two fundamental facts should be kept constantly in view as a guide, namely:—

1. The object of the resort to the theoretical "prospective competitor" is to simulate,

for the property under valuation, the condition which would normally be produced if that monopoly were actually subject to normal free competition, and thereby to make possible an estimate of what its profitability, under such conditions, would be.

2. It is evident that the entire economic justification for the use of cost of reproduction as one element in the determination of value lies in that, if properly used, it ordinarily gives practically the same results as would be obtained from an out-and-out new estimate of the cost of construction of a prospective competitive plant; the assumption must, consequently, always be made with this fact in view.

A.—Assumptions.—

Assumption 1.—The prospective competitor has the same accessibility to all sources of revenue as the property under valuation. In other words, it can, when properly seasoned, offer to the customers of the monopoly exactly the same facilities as those offered by the monopoly. To illustrate, the company under valuation has certain traffic agreements with its connections; the prospective competitor must be assumed, at the cost of a reasonable amount of negotiation, to secure the same terms. The old company reaches a great manufacturing plant by means of a track located through the only available route; the competitor must be assumed to be able to reach the same plant at "cost of reproduction" of the old company's track.

Assumption 2.—The development of the earning power of the competitor will occur through competition, under normal conditions, with the monopoly under valuation, for all the available business, present and prospective.

Inasmuch as the competitor, when properly seasoned, is able to offer the same inducements as can be offered by the property under valuation, it would ordinarily appear that, shortly after the commencement of its operation, the competitor should divide equally with the property under valuation the then business of the latter. Thereafter, the normal rate of growth of business in the industry, in recent years, is the rate of growth to be assumed for the business of the competitor, for the reason that one of the objects to be accomplished is the reduction of development cost to a normal basis regardless of the history of the individual enterprise (usually a history of small enterprises, failing, reorganised, combined, and recombined, over long periods of time).

Assumption 3.—The construction of the competitor's plant will be carried out under present-day methods, at present-day normal prices and under present-day legal and economic conditions. The dates of construction of the individual pieces of property will be selected so as economically to harmonise with the needs indicated by the programme of development of its earning power.

Except as can clearly be shown would be carried out otherwise under the present-day conditions confronting the competitor, the physical characteristics, and, consequently, the construction quantities, including land, of the competitor are taken as ultimately identical with those of the monopoly under valuation. Construction evidently economically greatly in excess of requirements would be developed piecemeal as required. Thus, the competitor railroad would ultimately have the same length of line, grades, curvature, quantities of grading, etc., as the railroad under valuation, but the structure built of materials no longer available would be reproduced with accessible materials of equal suitability.

Assumption 4.—The naked land value of the lands adjacent to those required by the competitor will be the same, in each case, as the naked land value of the lands adjacent to the lands of the monopoly. The improvements assumed to be resting on the land required for the competitor are of the same character and value per acre as those on similar lands in the general vicinity, but not necessarily adjoining the monopoly's local facilities. The right of a competitor to use public streets would, or would not, be paid for, according as present-day practices in the community dictate.

Assumption 5.—The competitor will be

obliged to pay for its land whatever amounts experience teaches would ordinarily have to be paid, in such communities, by railroads, for lands having naked land values equal to those surrounding the lands of the old company. These prices would include payments account severance and other damages.

B.—Mode of Procedure.—

1. A programme showing in commodities, not in dollars, the estimated gross business of the competitor, year by year, will be developed for a period sufficiently long to equal, at its end, the normal business of the property under valuation, as of the date of valuation.

2. A construction cost programme based, in general, on the reproduction of the existing properties of the monopoly under valuation, but at a rate and in an order harmonising economically with the adopted traffic programme of the competitor, will next be made.

3. An operating cost programme showing year by year the competitor's estimated gross operating costs, will next be constructed. There must be included in operating expenses a proper annual allowance for deterioration, obsolescence, abandoned property, maintenance, taxes, and rentals accruing after the commencement of operation; amounts accruing before this date are a proper addition to construction costs.

4. Tables of annual gross and net earnings of the competitor should next be prepared. The rate level to be used in estimating the competitor's gross earnings is the lowest rate level which, within that reasonable time which capital would be contented to wait, will produce net earnings for the competitor equal to a fair return on the competitor's cost to date.

5. From the preceding, the final table showing the competitor's estimated cost to date for each year and including loss of interest during construction and loss of fair return during operation can be prepared.

6. Having found the proper general rate level for use in estimating the prospective competitor's gross earnings, the fair value of the property under valuation is obtained by capitalising its profitableness at this same rate level.

II.—GENERAL DISCUSSION OF MISCELLANEOUS SUBJECTS.

1.—SUMMARY OF IMPORTANT PRINCIPLES ENUNCIATED BY THE COURTS WITH REFERENCE TO FAIR VALUE AND FAIR RETURN.

The essential principles enunciated by the Courts with reference to fair value and fair return can be summarised as follows:—

1. What the company is entitled to ask in order that it may have just compensation, is a fair return on the fair or reasonable value of that which is at the time utilised for the public convenience.

2. On the other hand, what the public is entitled to demand is that no more than a reasonable compensation shall be exacted for the service performed.

3. The public does not underwrite unwise or improvident expenditures; such expenditures do not add to the fair or reasonable value of any property, and the company cannot demand of the public that it be compensated for them.

We still are left by these decisions to discover the principles on which a proper method can be based for ascertaining (1) what is the fair value of the property of the company as used; and (2) what is a reasonable compensation for the service performed.

Nor does the following from San Diego Land and Town Co. v. Jasper materially forward the investigation:—

"The ascertainment of that value is not controlled by artificial rules. It is not a matter of formulas, but there must be a reasonable judgment having its basis in a proper consideration of all relevant facts. The scope of the inquiry was thus broadly described in *Smyth v. Ames*, 'in order to ascertain that value, the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stock, the present as compared with the original cost of construction,

the probable earning capacity under particular rates prescribed by statute, and the sum required to meet operating expenses, are all matters for consideration, and are to be given such weight as may be just and right in each case. We do not say that there may not be other matters to be regarded in estimating the value of the property.'"

2.—THAT REASONABLE COMPENSATION TO WHICH RATES ARE TO BE LIMITED.

Most enterprises under regulation differ from those operating in a free competitive field in that the former, to a greater or less extent, are protected from competition by the interposition of various physical and legal barriers. Thus, a waterworks may be protected from competition by legislative enactment, or it may be protected through ownership of the only reasonable available source of supply.

Reading between the lines of the Court decisions with reference to the fairness of individual cases of rate regulation, a broad guiding principle which seems to have been kept in mind is that the ruling should be such as to deprive the regulated enterprise of the benefits of any monopolistic protection and to permit of the earning only of such a return as, in the field of free and open competition, would ordinarily accrue to a similar expenditure of energy, foresight, and capital. This is well illustrated by the remark of Justice Holmes in *Cedar Rapids Gas Co. v. Cedar Rapids*, that what the Court excused was goodwill or advantage incident to the possession of a monopoly so far as might be supposed to give the plaintiff the power to charge more than a reasonable price. The following may aid in illustration:—

1. Assume that a certain farmer takes his wheat to Chicago and demands for it 3 dols. per bushel. Is that an unreasonable price? No, not if he can get it, for this is a free, competitive market; if the circumstances did not justify the price, others would fill the demand at a lower price, compelling him also to lower his price or keep his wheat.

2. A certain community obtains its water supply from a lake ten miles distant, hauling by wagon at a cost of 1 dol. per 1,000 gals. The A. and B. Company builds a pipe line and delivers water to the town at a cost, including normal rate of profit, of 10 cents per 1,000 gals.; it charges 50 cents, making a very high return on the investment. The quantity of water consumed by the town is so small, however, that no rival entering the field and dividing the demand with the present company could furnish water profitably for less than 55 cents. Is the 50-cent rate unreasonable? No, because the business is freely competitive; as the demand increases, the company will be obliged to lower its rates to prevent competition. Meanwhile, the company, by its enterprise, is performing a public service by saving to the town 50 cents on each 1,000 gals. consumed, as compared with the cost under the old method of haul.

3. Suppose that, in the preceding case, the A. and B. Company buys the water supply, and thus renders competition difficult, as the next source of supply is twenty miles away. Because of the distance—twenty miles—and the small demand of the town, it would cost the X. Y. Company 80 cents. per 1,000 gals. to deliver water at a normal profit. Would it be reasonable for the A. and B. Company to charge 75 cents. under these circumstances? The charge would be unreasonable because it is now based, not on that which would be established if competition prevailed, but, on the contrary, on the holding of a monopoly of the water supply in the vicinity.

4. A railroad was built from the City of A into certain undeveloped coalfields at B; en route it passes through a gorge which furnishes the only low-grade line across the mountain between the two points. As it completely occupies the gorge, no other railroad can be built, except at a prohibitive cost, over the mountains. A transportation charge which would net 6 per cent. on the cost of any line over the mountain would pay 20 per cent. on the cost of the gorge route. Owing to the absence of other coalfields in the vicinity, coal could be moved at a profit

even at this high charge. Would the charge under these conditions be unfair? The charge would be unfair, because it is based on a monopoly of the gorge route, and not on rates which competition would establish in the absence of this physical barrier.

The frequently recurring statement in the older decisions that "a public service company cannot lawfully charge more than the services are reasonably worth to the public as individuals" becomes an absurdity if literally interpreted. Suppose that, for example, the market for lumber on the A. and B. Railroad is at B and is 10 dols. per 1,000 ft.; a farmer owns timber some miles from the railroad at A, its distance from the railroad being so great that the cost of cutting and hauling to the railroad is 10 dols. per 1,000 ft., being just equal to the price which he would receive for the timber if delivered to the market at B. Inasmuch as there would be no profit to him in the transaction, the value to him of the service performed by the railroad company in hauling his timber from A to B would be nothing; consequently, under the literal interpretation of the decision, the railroad company could make no charge for the service, because it possessed no value to the owner of the shipment.

In the later decisions of the Courts, it has evidently been recognised that rates, to be fair, must be fair to both parties to the transaction, and that the statement as to the value of the service is meaningless; it is consequently omitted. Thus, in *Darnell v. Edward*, 244 U.S. 564, the Court, while pointing out that the public should not be compelled to pay rates based on extravagant expenditures, states: "In determining whether rates are confiscatory, because not yielding a proper return, the basis of calculation is the fair value of the property used in the service of the public."

3.—THE FAIR VALUE OF A PROPERTY SUBJECT TO RATE REGULATION IS THE SAME FOR CONDEMNATION AS FOR RATE REGULATION.

The well-known principle of law to be observed in condemnation cases is that the fair price to be paid the owner is that on which a buyer, desiring but not compelled to buy, would agree with a seller, desiring but not compelled to sell. The basis of agreement between the buyer and the seller, in such cases, is a conscious or unconscious meeting of their minds as to the profitableness, present and prospective, actual and anticipated, of the property under discussion and a translation of this into terms of value.

Where the property is subject to rate regulation and where, therefore, the profitableness can be varied by regulating the rates, it is evident that this rule must be modified so that it calls for a meeting of the minds of the prospective buyer and the prospective seller, based on their views of profitableness under fair rates.

In case of rate regulation, the owner is entitled to such rates as will enable him to earn a fair return on the fair value of his property. The measure of the fair value of his property is evidently the profitableness under fair rates, but this is identical with the fair value as determined by the previously mentioned rule to be observed in condemnation where rate regulation is in effect.

It is assumed, of course, that the same property is the subject of consideration in each case and that, if only the portion of the property used for carrier purposes is considered for rate regulation, the same (and not also all the non-carrier property) will be the subject of consideration for condemnation.

4.—THE GENERAL RATE LEVEL (AND NOT INDIVIDUAL RATES) IS THE SUBJECT OF THE INQUIRY IN THE DETERMINATION OF FAIR VALUE OF A RAILWAY PROPERTY.

The movement of bituminous coal to the Lake ports furnishes an excellent illustration of the situation to be dealt with in the consideration of individual rates. Coals for the Lake ports are obtained from the coalfields of Ohio, Indiana, Illinois, West Virginia, and Kentucky. The length of haul varies from a few miles to several hundred miles; also, the cost of transportation per ton-mile varies be-

cause of variations in grades, size of engine, etc. The quality of the coal, and, consequently, the selling price at the Lake port, varies with the different fields. The cost of production of the coal at the mines varies because of differences in rate of pay of the miners, thickness of vein, relative quantity of slate, etc. A uniform rate per ton-mile would drive some of the more distant fields out of the market. The situation resolves itself into this, that, with a fixed coal selling price per ton at the Lake port, the profit on the total operation involved is to be divided between the owner of the coal, the coal miner, the coal operator, the transporter, and the distributor, on some equitable basis.

It is evident that the position taken by so many of those engaged in the regulation of rates, to the effect that the fair value of the property used is not the principal factor and is often not even an important factor in the determination of fair rates, is entirely correct when limited to the consideration of individual rates. For the purpose of obtaining the fair value of the property used for the public, fair profitability is the only true measure of such fair value. Fair profitability, however, in turn depends on, not the fairness of the individual rate, but the fairness of the general rate level. In such valuation work, it can be assumed that all the individual rates are equally fair, or unfair, to the carrier, and that, consequently, the raising or lowering of the average rate level by a uniform percentage, is the remedy for unfairness, if such exists. The fairness or unfairness of the average rate level is determined by the one consideration that it will, or will not, afford a fair return on the value of the property used for the public.

Fair value, therefore, becomes an indispensable factor in the determination of the fairness of the general rate level.

5.—THE RELATION OF RISK TO RATE OF RETURN.

Liquid capital, in its choice of a field of investment, cannot be coerced; the direction of its movement is controlled solely by economic conditions. Provided it is merely a risk and not the certainty of loss, capital in seeking investment is not primarily concerned at the presence of risk, for it is able to protect itself by varying the rate of premium demanded.

No man makes his individual investment on any other basis than the hope that his particular investment is to be numbered among the successful ones. Many prove unsuccessful, however, and these failures, becoming more or less known, produce fear, great or little, according to their ratio to the successes. This fear must be overbalanced by the offer of a premium over safe investment rate. This premium is in the form of the known high profit made by the successes. If the premium does not appear to be high enough, the investor goes elsewhere.

In order that capital shall continue to enter a given industry, it is necessary that the return, risk considered, on capital invested in the industry as a whole must equal the return from investment in other industries. This is a matter of fundamental economic law, and is not permanently susceptible of modification by Court or Commission.

Suppose that, from the beginning, a single capitalist had furnished all the capital for each and every individual enterprise in a given industry; one in ten of his investments, measured by the amount of capital invested, proved failures, and the capital invested therein has been destroyed; the remainder are still live enterprises producing various degrees of return (or even loss) on the investment. In order that the capitalist shall be as well off to-day as if he had simply deposited his capital in a savings bank at 3 per cent. interest, he must have received from the successful industries a return on his total investment equal to 3 per cent. per year plus the amount of capital destroyed to date. Stated differently, he must have received each year on the total capital invested in still living enterprises a rate equal to the rate of return on safe investment plus the annual rate of destruction of capital in the industry.

If regulation holds the rate below this economic level, it may be possible for a time

to entice unwary investors into the industry; sooner or later, however, its rate of development will be retarded, if not destroyed. To hasten development, rates must be above normal. If the risks of the industry vary in different sections of the country, the rate of return will likewise have to vary, or those sections where the risk is greatest will suffer.

6.—HOW CAN THE FAIR RATE OF RETURN ON THE FAIR VALUE OF PROPERTY BE ASCERTAINED?

Most railroad property is owned by corporations whose securities are more or less actively traded in on the Stock Exchanges of the country; consequently, the current prices can be ascertained with little difficulty. Also, the records of the corporation show the amount of such securities outstanding from time to time in the hands of the public. The current prices multiplied by the amount outstanding give the public's opinion from time to time as to the market value of such property. The net earnings of the property from time to time are also ascertainable from the records of the corporation. Both the net earnings and the public's opinion as to market value are constantly fluctuating, but if we take average figures for each over a considerable period of time and divide the average net earnings (profitableness) by the average market value, the result will closely approximate the rate of return which, risk considered, the public demands on railroad securities before it will invest in them.

7.—GENERAL OBSERVATIONS ON THE VALUATION OF PROPERTIES SUBJECT TO COMPETITION.

The presence of competitors greatly complicates the problem of valuation, for the reason that there are, in such cases, many intangible factors which affect profitability, and which cannot properly be overlooked. For example, suppose all the railroads in a certain self-contained district were owned and operated as a single property. The methods suggested for the valuation of a monopoly could readily be applied. Suppose, however, this single railway system is split up into several more or less competing systems under different ownership and operation. It still holds true that profitability under fair rates is the measure of fair value in each individual case; but how shall we compute this profitability?

In the case of a railroad forming a part of a group in which the lines are in competition, one with the other, some of the elements which affect profitability are:—

Affecting Number of Units of Output.—Length of road; density and character of adjacent population; number and character of industries adjacent; traffic production or absorption capacity of connections; traffic capacity of the railroad—number of main tracks, character and size of terminals, number, character, and size of available equipment, etc.

Affecting unit price of output.—Rate regulation; length of haul; character of product transported; intensity of competition; percentage of through rate secured, etc.

Affecting unit cost of output.—Maximum grades and curvature; length of haul, character of product; character of equipment; adequacy of facilities; density of traffic; character of agreement affecting interchange of traffic, etc.; regulations affecting quality of service, etc.

Miscellaneous.—It is usually customary to enumerate among the things which make profitability possible: The presence of the physical property; the possession of a franchise permitting of the operation of such property; the fact that the period has already been passed through during which occurs the development of business to the point where its volume is sufficient for fair profitability (this is usually called "going concern value"); the fact that the property has been constructed so as to permit of unity of use and connected operation instead of being constructed so that it cannot be so used

or operated; the fact that the management has created friends who become the customers, and thus the source of revenue of the property.

Remembering that value is measured by profitability, the value to an individual railroad of the possession by such railroad of the various elements of profitability (and, therefore, of value) is measured, in the case of each such element, by the effect produced by the presence of such element on the total profitability of the railroad. These various elements can affect the profitability of the railroad as a whole only by increasing earnings or by reducing expenses or both. In order, therefore, to compute value in this manner, it is necessary to compute separately for each element of value of the property, its effect on earnings and expenses (and, consequently, on profitability).

To attempt thus to compute value by separately computing what part of the total value inheres in each of the various elements of value previously enumerated (and the many others which are suggested by such enumeration) is evidently to become involved in a hopeless mass of detail from which useful results cannot emerge. It would be useless to attempt to compute the value of a few of these elements unless the value of the sum of the remainder is known.

The composite effect of all of the various elements of value possessed by the individual railroad property is accurately weighed and registered in the profitability resulting from operation under the existing conditions. This, however, merely gives market value and not necessarily fair value (which would be measured by profitability, present and prospective, under fair commodity rates). How then shall we proceed to estimate fair value?

One suggestion advanced is that, in such case, fair value equals cost plus "other values and elements of value." The only true measure of value is profitability. The profitability of an individual railroad, subject to competition, bears no necessary relation, and can be made to bear no fixed relation, to cost. Therefore, to state that the value of such a property is equal to its "cost" plus "other values and elements of value" does not in any way advance the process of computing such value. It is merely equivalent to stating that the weight of a steer equals 500 lb. plus certain other weights yet to be ascertained.

(To be continued.)

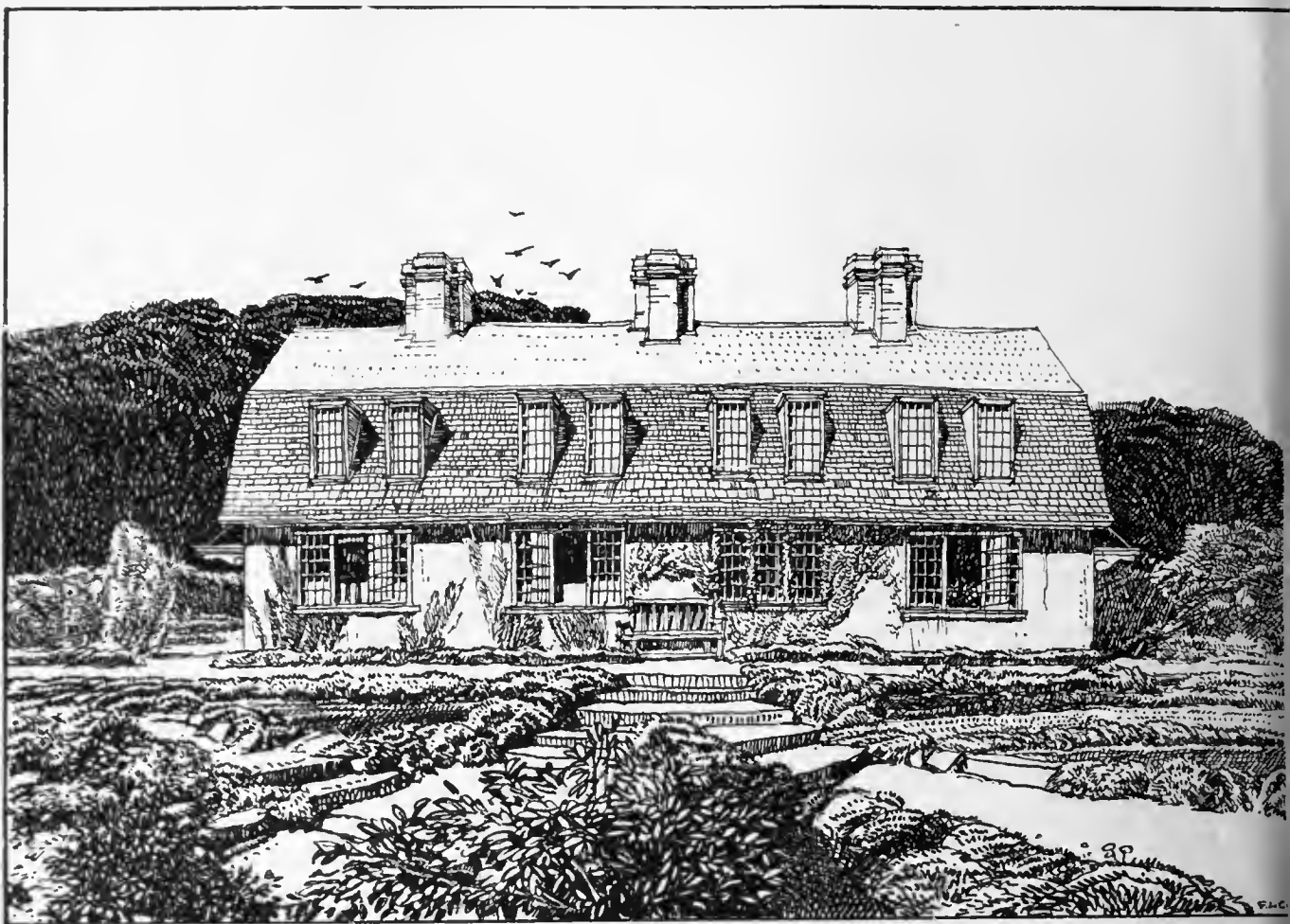
COMPETITIONS.

GRAVESEND WAR MEMORIAL COMPETITION.—Members of the Society of Architects are requested not to take any part in the above-named competition without first ascertaining from the Society that the conditions have been approved by the Council.

TWICKENHAM WAR HEROES MEMORIAL COMPETITION—RHYL WAR MEMORIAL HOSPITAL.—Members of the Society of Architects are requested not to take any part in the above-named competitions without first ascertaining from the society that the conditions have been approved by the Council.

The hitch in the relations between the Health Ministry and the Manchester Building Guild seems likely to be solved by a "compromise," which we are told "is of great importance, as it constitutes the basis on which the finances of future guild schemes will be founded." The point at issue was whether the Guild should be allowed to charge 10 per cent. on the cost of building a house to cover management expenses, payment for lost time, and so on, or whether the percentage should be based upon a definite cost figure agreed upon beforehand. The percentage system will be adhered to, but the Guild will accept a lump sum of £40 for each house instead of the proposed 4 per cent., which is the proportion of the 10 per cent. calculated to provide for continuous pay for the workmen. The 10 per cent. will therefore be reduced to 6 per cent. The Guild loses a trifle under the new arrangement on every house costing more than £1,000, but gains if the final cost is under that figure.

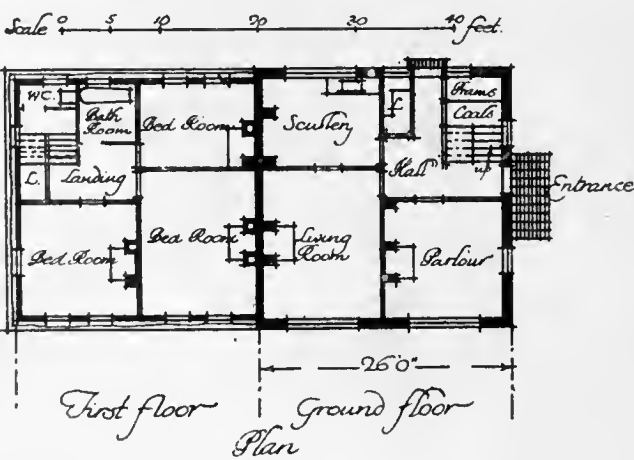
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View from South

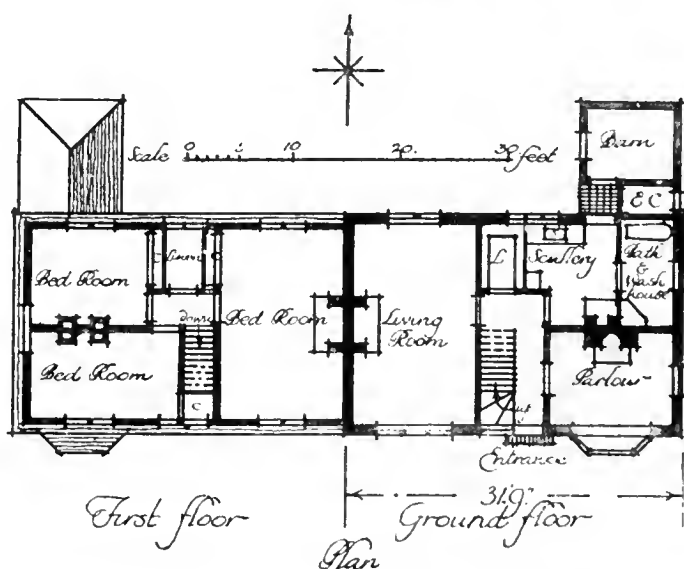


DESIGN for
Type No 2
Industrial Area,
Northern
Counties



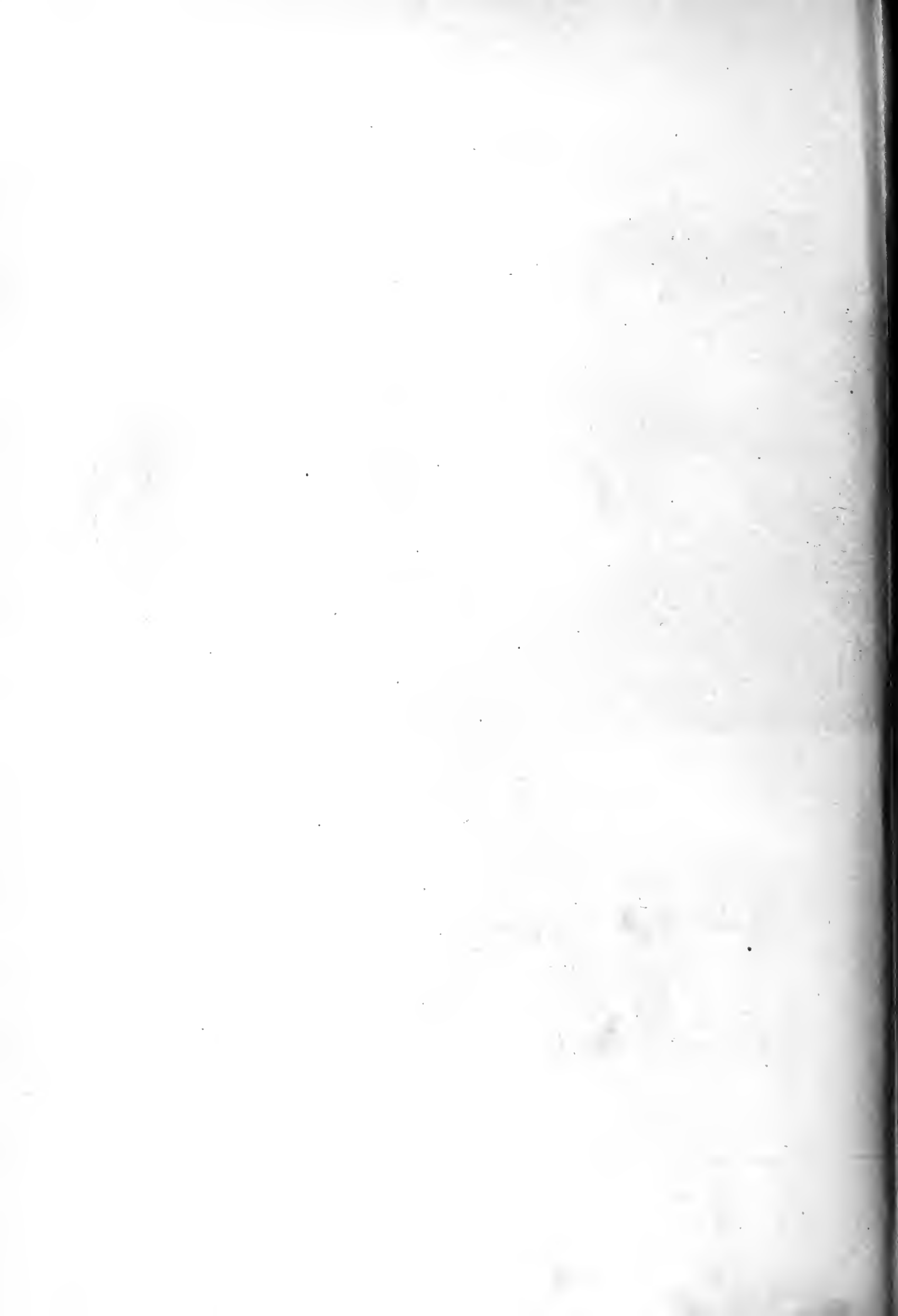


View from South West



COTTAGES

*Affred W.S. Cross,
M.A. Cantab; F.R.S.A.
Kenneth M.B. Cross,
B.A. Cantab; Architects
45 & 46 New Bond Street
London W.*



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Frank Rimmington, Delt.]

THE METROPOLITAN BOROUGH OF STEPNEY'S PR
Messrs. F. G. BRIGGS and ARNO

JUNE 4, 1920.



SD MUNICIPAL BUILDINGS, ARBOUR SQUARE, E.
ERNELY, F.F.R.I.B.A., Architects.

Our Illustrations.

THE METROPOLITAN BOROUGH OF STEPNEY'S PROPOSED MUNICIPAL BUILDINGS, ARBOUR SQUARE, E.

This drawing is at the Royal Academy this year. The designs for this building were prepared in 1915, and were placed first by Mr. Henry T. Hare, assessor, in an open competition, in which 170 designs were submitted. Owing to the war, actual building operations have not been commenced, but the working drawings have been prepared ready for a start to be made as soon as circumstances will permit. The building will be comprised of lower ground floor, ground floor, first and second floors. The borough treasurer's department is placed on the lower ground floor at the rear of the building, the large general office of which will be about 18 ft. in height; the rest of the lower ground floor consists of electrical showroom and store rooms for the various departments. The ground floor is approached by a principal entrance in the centre of the elevation facing Arbour Square, with subsidiary entrances on the two side streets. The departments of the borough engineer and borough electrical engineer are provided for on this floor. The grand staircase opposite principal entrance leads to the first floor, on which are placed large council chamber, 57 ft. square, six committee rooms, members' room, Mayor's parlour, and Town Clerk's department. On the second floor, which is reached by two subsidiary staircases, the Medical Officer of Health's offices are placed. The elevations of the building are of a simple character, and will be carried out in Portland stone. In preparing the working drawings the plans, as submitted in competition, have not been varied materially. Messrs. Briggs and Thornely, F.R.I.B.A., Royal Liver Buildings, Liverpool, are the architects.

SEMI-DETACHED COTTAGES FOR VARIOUS DISTRICTS.

The internal arrangements of these groups of cottages are founded upon the standardised plans numbered 38, 42, and 43 in the report of the Tudor Walter's Committee, issued by the Local Government Board. But in each case care has been taken to avoid some of the mistakes in planning that are apparent in the official designs. For instance, the living-room does not form the passage-way between the bedrooms and the sanitary offices, and a fireplace has been provided for each bedroom. The floors, roofs, and walls of the cottages are of concrete construction, the external walling being rough-casted, and the roofs finished either with tiles or Westmorland green slates. The architects are Messrs. Alfred W. S. Cross, M.A., V.P.R.I.B.A., and K. M. B. Cross, B.A., of New Bond Street, W. The drawings reproduced are on view at the Royal Academy Exhibition, the perspectives being by Mr. Griggs.

The retirement of Mr. Joseph Parry, consulting engineer, was announced to the Water Committee of the City Council, last Tuesday, when warm tributes were paid to his services to the department, extending over fifty-five years. "Perpetual youth and vigour" are the chairman declared, among his attributes.

To the memory of nineteen parishioners who fell in the late war, a Runic Cross, in Cornish granite, was unveiled last week in Skellingthorpe Churchyard. The memorial stands 11 ft. high, is on a tapered base, and on a sunken polished granite panel appears the inscription. The cross cost £115, and was erected by Messrs. M. Tuttell and Son, Lincoln.

THE ARCHITECTS' AND SURVEYORS' ASSISTANTS' PROFESSIONAL UNION.

FIRST NATIONAL CONVENTION.

The first national convention of the Architects' and Surveyors' Assistants' professional Union was held at the Albany Temperance Hotel, Sheffield, at Whitsuntide, there being present delegates from London, Southampton, Exeter, Birmingham, Cardiff, Liverpool, Manchester, Sheffield, Leeds, Newcastle, Edinburgh, Glasgow, and Ayr.

On Saturday evening, at the King's Head Hotel the delegates were the guests of the Sheffield Branch of the Union when Mr. Arthur James, Lic.R.I.B.A., chairman of the branch, presided over an exhibition of interesting pewter and glassware and a simultaneous informal concert, the items being supplied by the members and delegates.

During the two following days the Convention set itself to work in earnest. The Chairman of the London Executive Committee, Captain R. G. Ll. Evans, M.S.A., presided in the first instance, and moved the election of Mr. A. J. Penty, Lic.R.I.B.A., as the first president of the union. He paid tribute to Mr. Penty's high qualities as architect, thinker, social reformer, and not least as a man and a Yorkshireman. Mr. J. B. Hector, M.S.A., London, seconded, and sketched the outlines of the work the union must do under Mr. Penty's presidency. The election of Mr. Penty was hearty and unanimous, and in thanking the delegates for the honour conferred upon him he referred briefly to the state of the profession at the present day. He felt there was a work in the movement; he had wanted to see it come into existence all his life. He did not think there was any profession in which one had to know so much to earn so little, and we were not only worse off in regard to our earnings, but we had not the security that other employments had. The union's first work must be to build itself; on that everything depended. He looked to the assistants to save the profession, and not to the principals. The former could meet on a communal basis; other interests divided the latter. There was not the enthusiasm in the profession to-day that there once was, and it no longer attracted that proportion of keen and intellectual young men which a healthy and expanding future demanded. He felt that the economy of the profession was wrong, it had become too much separated from its base, the building industry. This had led him to advocate the guild idea now shaping the Building Trade Parliament and the Building Guilds. Up to now the architectural profession had seemed always to be formulating a policy to bring itself into closer relation with the age, and always managed to put itself further away because it mistook what the age was.

The Convention elected the following officers for the ensuing year:—

Vice-President: Captain R. G. Ll. Evans, M.S.A.

Hon. General Treasurer: R. G. Strachan, P.A.S.I.

Hon. General Secretary: Charles McLachlan, A.R.I.B.A.

Hon. Organising Secretary: C. F. Overy, M.S.A. (late of Liverpool).

Hon. Assistant Secretaries: H. Ascroft, Lic.R.I.B.A.; R. J. Jones.

Also the following, to be members of the Central Executive Committee:—H. Ascroft, Lic.R.I.B.A.; T. Braddock; W. W. Davis, P.A.S.I.; R. A. Duncan; J. W. M. Dudding (late of Dingwall, Scotland); R. G. Ll. Evans, M.S.A.; P. W. Farmer; J. B. Hector, M.S.A.; G. N. Hannan, P.A.S.I.; R. J. Jones; A. W. Mather, M.S.A.; H. Bryant Newbold (Weston-super-Mare); Charles Pickford, Lic.R.I.B.A.; G. S. N. Stone, P.A.S.I.; R. Thorburn (late of Sheffield), and T. W. W. Thornton, any member of a Provincial branch Executive present in London during a Central Executive meeting to be co-opted for the occasion.

Reports by the Secretary and Treasurer were received and approved, both pointing out that the growth of the work of the union would necessitate immediately the taking of its own offices, the employment of

permanent assistance, and an increase of the present absurdly low subscription.

The matter submitted to the Assistants' Welfare Committee was reviewed at length and heartily endorsed. With regard to professional education, it was unanimously agreed that this must be wholly in the control of the profession and the building industry, and that the present system of articles and apprenticeship must go *in toto*. The proposals as to minimum wages were approved, and generally felt to be fair and not excessive. Other matters decided were the imposition of an entrance fee at an early date at the discretion of the Executive, an increase in the subscription, subject to a ballot of the members, registration under the Trade Union Acts in order to give the union legal status, the setting up of a divisional council for Scotland to deal with conditions of employment and to set up an employment bureau, this on the motion of Mr. J. Mitchell, Jun. (Glasgow), seconded and supported by Messrs. J. M. D. Henderson (Ayr), and A. H. Lamont, A.R.I.B.A. (Edinburgh). The proposals of the Ministry of Health with regard to "luxury" building were emphatically condemned, and the action of the Executive in the matter endorsed. The practice of local authorities employing non-professional men to do professional work was very severely condemned, as also the very general practice of designating qualified architects and surveyors as assistants or draughtsmen instead of as assistant architects or assistant surveyors. The Executive were instructed to watch the interests of non-practising members of the profession under any scheme of registration. It was also an instruction to the Central Executive to prepare a scheme by which the special interests of the members, whether employed in private, Government, municipal, or industrial offices, might best be served.

The Convention broke up on the Monday afternoon, the various delegates departing to their committees or to found new branches imbued with the spirit of co-operation, cordiality, enthusiasm, which augurs well for the future of the union, scattered far, but one in the close bond of craft brotherhood.

The whole of the expenses of the twenty-three delegates were defrayed by voluntary contributions of the members for the special purpose.

OBITUARY.

We regret to announce the death, at the age of sixty-nine, of Canon Rawnsley, which took place last Friday at Allan Bank, Grasmere, Westmorland. Educated at Uppingham School, then under Dr. Thring, he proceeded, in 1870, to Balliol. Taking a third class in Natural Science in 1874, he became ordained in 1875. In 1878 a relative appointed him to the vicarage of Wray, on Lake Windermere, and here he began his career of unceasing activity, moral and religious, poetical and philanthropic, which lasted for something like half a century. The National Home Reading Union, the Pernicious Literature Committee, the Schools of St. George of Harpenden and of Keswick, the Rylands Library of Manchester, the Royal Society for the Protection of Birds, were a few of his subsidiary occupations. He was a Proctor in Convocation, he was Honorary Chaplain to the King, and he served as chaplain, with the rank of colonel, to the Border Regiment of the Territorial Force. But perhaps his chief work was the founding of the National Trust for the Preservation of Places of Historic Interest and Natural Beauty, which has had the sympathy and subsidies of men and women all over the country and the Empire who cared for nature and history.

At the annual dinner of the Provident Institution of Builders' Foremen and Clerks of Works, held at the Connaught Rooms last Saturday, Mr. A. H. Adamson said they should bring before the Government the danger of curtailing luxury building. Mr. William Woodward said that Dr. Addison's intentions might be good, but in restraining luxury building he would not add one foot cube to the building of houses for the working classes.

THE CITY CHURCHES.

Mr. Mervyn Macartney, Surveyor for the fabric of St. Paul's Cathedral, at a meeting of the London Society in the theatre of the Royal Society of Arts on Tuesday, gave a lecture illustrated by lantern-slides on the nineteen City churches which are threatened with demolition.

Mr. Macartney gave descriptions of the exteriors and interiors of the nineteen churches, among them St. Magnus, with its fine woodwork, altar, and reredos; St. Mary-atte-Hill—of which the body was destroyed in the Great Fire and the tower remains—with its splendid carving by Wren and Rogers; St. Dunstan's—of which the tower was burnt and the body remains; St. Botolph's, Aldgate, with its beautiful garden.

Bishop Brown, Secretary of the Commission which has been inquiring into this subject, who was at one time joint patron of nine of the churches, said: The Church of England could no longer undertake to hold the nineteen churches as so many museums, and they could not be expected to hand over property worth £1,700,000 to the Corporation of London. ("Why not?" and cheers.) If these churches were to continue as museums they must be maintained by some other body than the Church of England. Of the remaining churches, St. Augustine's and St. Faith's might be used as a chapter house for St. Paul's, and others might be used with all due reverence as parochial or guild halls.

Mr. Ellis, who moved the resolution in the Common Council against the pulling down of the nineteen churches, said the Corporation were prepared to help the Church of England, but they were not prepared to allow them to destroy City monuments.

Lord Phillimore, Chairman of the Commission, contended that four incumbents and sixteen clergy were sufficient for the needs of the resident population of the City, in addition to St. Paul's, the Temple, St. Bartholomew's, and altogether twenty-eight churches which would remain available for one purpose or another.

Mr. Freshfield, President of the Church Preservation Society, said he regarded the proposal as an attack on the rights of the citizens. He said the crux of the matter was the vote of the parishes. These churches were built by taxation in consequence of the Fire, and were supported by rate in lieu of tithe. For that reason Parliament gave the citizens the right of veto in regard to proposals to pull them down.

Sir William Collins, another member of the Commission, expressed the view that nineteen was too large a number to destroy.

Sir Aston Webb (P.R.A.), who presided, said that he kept an open mind on the subject.

A resolution was passed thanking the Lord Mayor and Corporation for the efforts they were making to prevent the demolition of the churches, and expressing the feeling that these memorials of the past might in the future be used to a much greater extent in the daily religious life of the people.

Liverpool University has conferred honorary degrees on a number of people, including Sir Alfred Booth, Sir Michael Sadler, Sir Reginald Blomfield, and Sir Alfred Dale.

An ordinary meeting of the Society of Architects will be held at 23, Bedford Square, W.C., on Thursday, June 10, 1920, at 6 p.m., for the election of members and other routine business.

The King, who was accompanied by the Queen, laid the foundation-stone of the new wing of the London School of Economics at Gresham Street last Friday. The main structure was erected some years since at the cost of the late chairman, Mr. John Parnham Edwards.

"While the Government are offering subsidies to builders who are willing to speculate in house building," writes a Birmingham correspondent, "the banks are refusing to advance money on any securities for the erection of houses. Can anyone in the building trade or out reform the law we can build under such conditions? One can remember the time when the banks were practically the cause of house building. Where are we?"

THE WELDED JOINT IN STRUCTURAL-STEEL WORK.

By RALPH HOWARD.

An electric welding company needed a new building as an addition to its plant in Brooklyn, and needed the building in a hurry. The engineers were absolutely confident that such a building could be constructed by welding instead of riveting, and that there were specific advantages which would result from such a method of construction.

In the first place, the construction work could be done during twenty-four hours of the day without disturbing the people in either commercial or private life, because the process is absolutely silent, the nerve-racking noise of riveting being entirely eliminated. Second, the necessity for fabricating steel parts was almost entirely eliminated, and likewise the necessity of waiting several weeks until such parts should be fabricated and made ready for erection. Third, by electric welding, joints of 100 per cent. strength were made possible, as against the ordinary 60 or 70 per cent. strength possessed by a riveted joint. Fourth, there was possible reduction in the actual weight of metal required in the various members. Fifth, tests indicated that construction work by electric arc welding could be done at lower cost than by riveting.

Before the company could proceed with its building plans, it was necessary to obtain permission from the various city building departments, and such permission would only be given if certain tests were made which would satisfy the building officials that a welded structure would be absolutely safe and would compare favourably in all other respects with a riveted steel framework. Certain samples of welded joints were required for tests as to strain, compression and shearing.

The tests of these samples were entirely satisfactory to the building officials. Permission was subsequently given to proceed with the erection of the steel framework, but there was still another test to be made of the steel trusses of forty-foot span which were to be used to sustain the roof. These trusses were of fan type of design, and all members were electrically welded together, no bolts or rivets being used. The trusses were spaced 20 ft. apart, supported by 8 by 8 H-beam columns 10 ft. high; on the sides of these columns, brackets were fastened to carry an overhead travelling crane of five-ton capacity. The weight of each truss was about 1,400 lbs. The top and bottom chords were composed of 4 by 5 by $\frac{3}{8}$ T-irons, and the struts were 3 by 2 by $\frac{3}{8}$ -in. angles.

The trusses were designed for a live load of 40 lbs. per square foot, each truss supporting a panel of 800 square feet. They were tested at a load of 120 lbs. to the square foot, or a total load of 48 tons on the two trusses. The load consisted of gravel in bags, which were piled in tiers on planking arranged for the purpose. Readings were taken at different increments of the loadings for the deflection in the truss members, and it was made evident that electric welding is a dependable method of uniting structure members and is stiffer than riveting if the work is properly performed.

It is particularly interesting to note that this test was actually carried to the limit of elasticity of the metal used. There is little doubt that this successful demonstration will go to further the use of electric welding in steel construction work. The many specific advantages are too important to be disregarded by engineers and contractors, particularly in these days when there is a vital demand for increased housing facilities for homes as well as for industries. The very fact that this test was witnessed by members for all building departments in Greater New York, and as a result a permit was issued for the erection of the building, should be sufficiently convincing to the sceptical that electric welding as a means of construction is not an unknown quantity.—*Scientific American*.

PROFESSIONAL AND TRADE SOCIETIES.

THE SURVEYORS' INSTITUTION.—At the annual general meeting on Monday last the fifty-second annual report of the Council was presented and adopted. The total membership is now 5,027, the increase for the year being 72. The receipts were £14,971 11s. 2d., and the expenditure £13,036 0s. 11d., leaving a balance of £1,935 10s. 3d., as against £1,349 13s. 7d. on January 1, 1919. The number of candidates who presented themselves for the preliminary and professional examinations, which were respectively 70 and 485, is satisfactory as evidence of the rapidity with which men have settled down to their civilian work after demobilisation. The Council feel that competition for the scholarships offered is not what might be looked for, and they offer additional inducements in future examinations. The ordinary meetings have been increased, from five during the war, to seven. The work of the various special committees is detailed. The annual country meeting will again be held this year, this being the first since 1914, when a most successful meeting was held at York. An invitation has been accepted from the Gloucester, Somerset and North Wilts Branch to hold a meeting at Gloucester. This will take place on July 8, 9, and 10. The Junior Meetings organisation is again in full operation, seven meetings having been held during the session with satisfactory attendance. To meet the great increase in office expenses, the scale of professional charges issued by the Institution has been revised and certain items increased in amount, in co-operation with the Auctioneers' and Estate Agents' Institute, so that the scales issued by the two societies are still in accord. The Council have accepted invitations to be represented upon the Building Industries Consultative Board, which has been formed by the Royal Institute of British Architects for the purpose of establishing better conditions in the building trade, and on which all the interests connected with building are represented; and on the Architects' and Surveyors' Assistants' Welfare Committee, which has been set up as a kind of Whitley Council for bringing together employers and employees in the two kindred professions. The Institution has been admitted to membership of the Conjoint Board of Scientific Societies, which was established in 1916 at the instance of the Council of the Royal Society for the purpose of promoting the co-operation of those interested in pure or applied science and the application of science to industry. The report of the scrutineers, dated May 20, was to the effect that Mr. John Willmot, Birmingham, had been elected president of the institution for the coming year, and Mr. Edwin Savill, O.B.E., London, vice-president. Mr. George C. Smyth-Richards, O.B.E., a past-chairman of the Devon and Cornwall Branch, was elected to the vacancy as ordinary member of council caused by the promotion of Mr. Savill. The other members of the council were re-elected without change.

An Empire Timber Exhibition will be held at Holland Park Skating Rink from July 5 to 17.

Bracebridge parishioners have decided to erect as a war memorial to the fallen from that suburb a ring cross, 15 ft. in height, on granite bases. The memorial, it is expected, will cost about £235.

A portrait of Mrs. David Wallace is given on the front page of last week's issue of *Country Life*. She is the eldest daughter of Sir Edwin Lutens and Lady Emily Lutens, and her marriage to Captain David Euan Wallace, 2nd Life Guards, recently took place at the Chapel Royal, Savoy.

"Ugh!" said Mr. Symmons, the Marylebone magistrate, on Tuesday, with a shrug of his shoulders, "there is no blood in the Englishman." He had been asked by a landlord for the enforcement of an ejectment order against a tenant, and the applicant pleaded that he, his wife and children, were now compelled to live in one room. "It is all because they won't build houses. Neither party has the courage to say to the people who ought to build, 'Build me a house! Don't talk about it, or about bonds, but build the house!' as they could if they chose."

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Correspondence.

SOCIALISTS AND CO-OPERATORS.

To the Editor of THE BUILDING NEWS.

Sir,—The Socialists are most anxious to obtain control of the Co-operative movement, and the order has gone forth to all sections of the Socialist and Bolshevik movement to make an effort to capture the official position in the co-operative societies. The Socialist success in exploiting the trade unions has led them to believe that a similar success awaits them in the co-operative movement. The millions of capital in this movement is a great temptation to the Socialist, and he will not be happy until he can lay his hands upon it, as he has done with the funds of the trade unions.

Socialists do not necessarily believe in the principles of the co-operative movement. The Socialist Press often refers with contempt to the capitalistic methods of the co-operators. One Socialist paper says that "the co-operative movement is a creation of petty bourgeois ideology," and that its trading, "like all capitalist trading, has a corrupting tendency, and creates in the workers engaged in it a bourgeois psychology and the employers' spirit." The same paper boasts that in Russia the co-operatives have been stripped "of their power for evil," and have been made subject to the Soviet Government. It is further stated that when the new social order of the Socialists is established in this country, the co-operatives will only have a temporary place: "all their shareholding dividends and private trading apparatus must be swept away."

These Socialistic opinions concerning the co-operative movement indicate that the Socialists' desire to form an alliance with the co-operators is not due to the love of the Socialists for the co-operative movement. It is not the co-operator, but his money, that the Socialist wants.—Yours, etc.,

W. FAULKNER.

17, Heather Gardens, London, N.W.4.
June 1, 1920.

COMPETITION CONDITIONS.

Sir,—The Competitions Committee of the Royal Institute have just received the enclosed letter with reference to a competition the conditions of which were not in accordance with the R.I.B.A. regulations. The Committee think that your readers may be interested to see this concrete illustration of what is likely to happen when architects refuse to avail themselves of the regulations which have been formulated for their protection.—Faithfully yours,

IAN MACALISTER, Secretary
R.I.B.A., 9, Conduit Street, W.1.
May 26, 1920.

DEAR Sir,—Further to mine of the 26th inst. re the — War Memorial Competition. A local — Company have now stepped in with a design of their own and an offer to erect a memorial to it, and this offer has been accepted. All the designs sent in to the Memorial Committee have, therefore, been thrown aside, and none of the competitors received any reward, which serves them right for competing under such conditions.—Faithfully yours,

The Secretary, R.I.B.A.

Mr. A. G. Bradshaw, borough surveyor and engineer of Lancaster, has been appointed county surveyor and bridgewaymaster to the Lindsey (Lincs) County Council. There were between sixty and seventy applicants for the post.

Edwick Town Council last Monday night discussed the delay with the housing scheme, and Town Clerk Smith, Chairman of the Housing Committee, said that officials in the office of the Board of Health were responsible for holding up the plans. Their own plans had been sent to the Board of Health, and, by way of return, the Board of Health had sent other council's plans to the Board of Health, and the delay was a result of the delay.

Our Office Table.

Important developments are taking place in connection with the Portland cement industry in the neighbourhood of Port Elizabeth. Harbour improvement works are in progress in Algoa Bay, and it is probable that the Portland cement industry will receive considerable encouragement in the immediate future in meeting this local demand alone. A sum of £4,500,000 has been mentioned for the construction of breakwater jetties and port works out of which £1,500,000 is now being expended as a first instalment. United Kingdom manufacturers of plant should find a ready market in connection with both the Portland cement developments and the Algoa Bay Harbour schemes. One leading syndicate at Port Elizabeth claims to have discovered a large deposit of the limestone, etc., suitable for the manufacture of cement. In fact, the original estimate of available materials for manufacturing cement is now more than trebled.

Dr. A. Mackenzie, late major of the R.E. Camouflage School, addressing the International College of Chromatics at Caxton Hall last week, declared that in the Great War paint was generally worse than useless as camouflage. It simply drew attention to the fact that there was something to hide. Colonel Solomon J. Solomon, owing to his keenness and enthusiasm, did the cause harm. From his fertile imagination emanated the flat top covered with hay or raffia, which was so useful to our gunners. But he regarded the Boche as a super-man, and evolved the theory that the enemy obtained surprise concentrations by hiding brigades, divisions, and even armies under camouflage material representing dummy fields, roads, hedges, and houses. The erection of these enormous structures, square miles in extent, would have involved the expenditure of millions of pounds in material and a vast amount of labour. Yet there was not the smallest trace of the remains of these when the Boche evacuated Belgium, nor could any evidence be obtained from the inhabitants that anything of the kind had ever existed. There were much simpler methods of effecting surprises than the fantastic ideas of Colonel Solomon.

"Zion, triumphant, begins her bright reign" in a smokeless land. The President of the English Zionist Federation told his hearers last Saturday that he was thankful there were no gold mines or oil wells in Palestine. It was a land not rich in natural resources, and there would be no attraction for international capital, whether Jewish or otherwise. But national capital would be attracted, and it would have to be poured into the land in order to make it flourish. They would do all they could to keep smoke out of Palestine. The factory which was now the centre to a certain extent of social progress was at the same time a centre of social disease. But industry would be carried into the home of the Jew. The electrification of the whole country was essential, and there was sufficient water power to provide it. By those means every man could have a motor in his own home.

At Nottingham, last Sunday, a lecture was given by Mr. W. W. Starnes on "Carillon and Bell Music" in order to stimulate public interest in the scheme for the civic war memorial. The lecturer urged the suitability of a carillon (with clavier) for such a purpose, and pointed out the value of the instrument in promoting the love for folk music. He described a tower, not less than 150 ft. high, a carillon of 47 bells (four octaves, chromatic), the largest of which should be four tons in weight, and a clock with quarter chimes and automatic arrangement to play tunes (English or Continental plan). This would cost, he said, approximately £25,000 to ensure the memorial being worthy of the city.

In furtherance of the housing bonds campaign, a deputation from the Town Council on Monday attended a meeting of Walsall Chamber of Commerce, and asked for the co-operation of the manufacturers of the town.

The Mayor expressed the opinion that the response locally up to the present had been disappointing, seeing that the total amount subscribed was only about £49,000, whereas provision had been made by the town council for the erection of 500 houses, and an additional 1,250 needed to be built if the money could be found. In the course of discussion, Mr. Talbot complained that the Town Council (of which he is a member) passed a scheme for 1,700 houses in three minutes, and said the Mayor declined to allow any debate. He (the speaker) favoured building 500 houses, but he would not go beyond that. To resolve on building large numbers of houses, no matter what the cost, was the way to inflate prices. No wonder notice had been given that bricklayers' wages would be in future 2s 2½d. an hour. He believed the reason manufacturers had not subscribed more liberally was that they considered the working men should themselves find the money. A resolution was passed asking the manufacturers of the town to take the matter up and inaugurate a definite scheme for their own works.

LEGAL INTELLIGENCE.

SUCCESSFUL APPEAL AGAINST STOP-UP OF PUBLIC HIGHWAYS.—An appeal by the Liverpool Wholesale Fruit and Potato Merchants' Association, the Liverpool Fruiterers' Association, Ltd., and a number of individual firms against a certificate of the city justices proposing to stop-up part of Queen Square, came before Mr. E. G. Hemminger, K.C., Recorder, at the Liverpool City Sessions last Friday. The Lord Mayor, aldermen, and citizens of Liverpool were the respondents. The proposal, which, it was stated, would mean the reduction of the width of the square from 117 ft. to 82 ft., forms part of the extensive alterations incidental to Sir Oswald Stoll's scheme for the erection of a picturedrome in St. John's Lane, and the consequent widening of that thoroughfare from 70 ft. to 100 ft. Mr. Miller, K.C., for the appellants, raised the legal objection that the certificate of the justices was bad. There was, he contended, no authority to use the machinery of the Highways Act to stop-up any part of a highway in this way. A further defect was that the justices, in granting the certificate, were not dealing with the present state of affairs, but with possible future contingencies dependent upon the carrying out of Sir Oswald Stoll's scheme. Mr. Rigby Swift, K.C., for the respondents, said the right of access would not be in any way affected.—The Recorder said that, on the points of law raised by Mr. Miller, he must decide in favour of the appellants. The appeal would be allowed with costs.

Chelsea Borough Council is recommended by its Works and General Purposes Committee to urge upon the Government the urgent necessity of restoring Burton Court, Chelsea, to its former use as an open space.

A three-panelled stained glass window, designed and executed by Mr. Oscar Paterson, Bath Street, Glasgow, was unveiled in the Y.M.C.A. Hall, Kirkintilloch, last Sunday, in memory of twenty-three of the members killed in the war.

Building of fifty houses at Addlestone, Surrey, is still being delayed because the Ministry of Health decline to waive their objection to cupboards being placed in the No. 1 bedrooms. The local Council considers that the cupboards should be provided, as would any other rational body of men.

At the last meeting of the Birkenhead Education Committee it was decided that a school should be erected in Pilgrim Street at a cost of £20,000, to accommodate 648 elementary scholars. A larger school had been proposed, but the cost was prohibitive. The new school will be built of reinforced concrete, will be all on one floor, and will last at least thirty to forty years.

Architects, surveyors, builders' clerks, and others buying or renewing their drawing and other instruments, should not fail to send to C. Baker, of 244, High Holborn, for his June list of second-hand scientific instruments of all kinds. They will save money and very often get a better than new bargain, as every bit of apparatus offered has been through the workshop and all defects made good, and the appliance thoroughly overhauled. Men recently demobilised, and others whose kit needs overhauling, or who may have superfluous pieces to dispose of, will find better treatment at Baker's than anywhere else.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

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Strand, W.C.2

OUR ILLUSTRATIONS.

"Aldwych House," now in course of erection for Agricultural and General Engineering, Limited, in Aldwych, London, W.C. Elevation and plan. Messrs. Gunton and Gunton, Architects.
New Organ Loft and Screen, Higham Ferrers Church, Northamptonshire. Royal Academy, 1920. Messrs. Temple Moore and Moore, F.R.I.B.A., Architects.

Currente Calamo.

The King's visit last Monday to the Cricklewood Government instructional factory where disabled men are being taught how to support themselves and their families by honest work emphasises the proof that, but for the ill-concealed hostility of the trade unions, there should be no lack of skilled labour in the various trades where manual dexterity is a *sine qua non*, and who are not likely to play "ca' canny." Already nearly twenty-two thousand men have been trained in various trades, while twenty-three thousand are still in training and twenty-four thousand on the waiting list. The number of disabled men now employed by firms throughout the country is one hundred and forty thousand. Among the operations which the King and Queen watched with interest were the shaping and fixing of lead gullies for roofs, the making of wiped joints by plumbers, coach-painting, the renovation of dilapidated motors, the moulding of ceiling ornaments, fine-lining, lettering, painting, marbling, graining, sign-writing, plastering, and the various forms of woodwork. In all these satisfactory efficiency was evident; and in some to a much greater degree than is manifested by some of the present-day workmen who are so afraid of "diluted labour." The King himself astounded some of the beholders by his skill as a bricklayer; and, under circumstances never likely to arise, would prove a formidable competitor with the 150 bricks a day man. Meanwhile, his good example will beyond doubt enhance the real dignity of the vocation of the skilled and willing craftsmen, and encourage the most laudable efforts of those who are helping to make more such out of such good material, instead of adding them to the mere clerks and office-loungers who are still camouflaged in so many Government snug hiding-places at the cost of the taxpayer.

Lord Haig's rebuke to the trade unionists who have conspired to keep ex-Service men out of employment is well deserved. Many trades in this country are severely handicapped for lack of labour, but the doors are still shut to ex-Service men because men who enjoyed higher wages at home because of the war

will not extend a hand to the men who fought for them. The builders are by no means the only men who have shown this dog-in-the-manger spirit. The Electrical Trade Unions, the Leeds Ironmoulders' Union, the Wagon Builders, the Engravers, the Sheet Metal Workers, and the Clock and Watch Makers' Union are some of the organisations which have rejected the claims of the ex-soldier, and the Amalgamated Society of Engineers refused to dilute its personnel by the admission of 1,750 men for office work only. There is plenty of employment for every man who will work, and the refusal of a share to the men who gave up all to save England from the Hun is as reprehensible as his greed, which brought about the struggle which has convulsed the world.

Does a trifle in percentage on cost matter to any extent to labour, whose concern is mainly wages? The additional 100 per cent. of increased wage is of greater consequence than the percentage difference between a fixed and an indeterminate price. But, since shortage of labour is the cause of no buildings, how is competition for labour to provide the need? Have the guilds some diluting or stimulating means? If not, and the stock of available labour remains as now, is it likely that private employers engaged on open contracts will relinquish their claims to labour? If the building operatives' organisation were imbued with a sense of communal duty and prepared to resist the desire for more wages and less work, as well as the inducements that private employment will be sure to put forth, there might be some prospect that the problem of housing would find help through the instrumentality of the guilds. But unless this spirit exists, and there have been no signs of it yet, the guild's entry on the scene is merely a camouflaged attempt to hoist wages still further than they have been settled by the "Builders' Parliaments."

The last crescent-road to be laid out in London before the London Building Act prohibited the formation of such roads was that for the development of a Chelsea property, which was mentioned in *The Times* last week as having been sold. Chelsea Embankment Court and the Embankment Gardens occupy a triangular site

adjoining Chelsea Hospital, on which a naval and military exhibition was held some years ago. It was not an easy site to deal with to the best advantage, and there can be no doubt that the problem was much more advantageously solved than it could be now. Mr. Delissa Joseph, F.R.I.B.A., the architect of the property, named the road Embankment Gardens. It is occupied by town mansions and flats, backing on to Chelsea Hospital, and each block of flats is of distinct design. The piece of ground facing Chelsea Embankment, between the Embankment and the crescent road, is occupied by Chelsea Court, a block of residential flats planned on the basis of the letter "T." Thereby it was made possible for every one of the buildings in Embankment Gardens to have a view of the river. It is a curious coincidence that another town property, mentioned in *The Times* of the same issue, should also have been developed under the supervision of Mr. Delissa Joseph. This property was Adelaide Mansions, Queen's Gate, South Kensington. This was the last site in Queen's Gate left over from the surplus lands of the exhibition of 1851, and it had been vacant for half a century when Mr. Delissa Joseph took it in hand. Both the Chelsea and the Kensington properties have been dealt with by Messrs. John D. Wood and Co., who are holding an auction early next week.

In the development of a code of recommendations adopted at the recent Canadian National Conference on Concrete House Construction, a number of points have been laid down, the majority of which are familiar to all interested on this side. There is one, however, which some of us may do well to note. Some concrete block enthusiasts have recommended that plaster be applied directly to the block surface. These recommendations have been made despite the fact that it is customary to furr out the plaster for all kinds of masonry houses. Furring and lathing costs only a trifle more when considering the total cost of the house, and it assures a warmer wall. The better insulation thus provided effects a considerable saving in the winter coal bills, and provides a house which is cool in summer. In no case, it is laid down in the code above referred to, shall plaster be applied directly on the concrete sur-

face, unless the house is constructed according to the following specifications:—The wall shall be constructed of two-piece block providing a continuous air space from the footing to the eaves and entirely around the building. All sills and lintels shall be of the two-piece type, and the inner and outer sections shall be separated so as to provide a clear air space between them. The outside of the foundation below grade shall be waterproofed by painting the wall with hot pitch or asphalt, or by some other effective means.

The Victoria and Albert Museum, South Kensington, has issued at eighteen-pence a well-illustrated monograph of the panelled room formerly in No. 26, Hatton Garden, once the town house of Sir Christopher Hatton, Lord Chancellor in the reign of Queen Elizabeth, on the site of which a network of streets of dwelling-houses of rich merchants was erected in the second half of the seventeenth century, but the panelling was not added till the first half of the eighteenth century. Both the panelling and the carvings are worked in pine-wood, and are of considerable interest, if only as showing, as Mr. Oliver Brackett, the author of the booklet remarks, that a group of men possessed of but little imagination, though much industry, succeeded in raising the standard of English building and decoration to a higher pitch of technical efficiency than it had before enjoyed, bequeathing a legacy which their descendants dissipated in the confused tangle of conflicting fashions. The illustrations show the room in its original position at Hatton Garden, and as now set up in the Museum, together with measured drawings and details. It can be had through any bookseller, post free for 1s. 9d., or direct from the Director of the Museum.

LIGHT AND SIGHT.

In order to see any object the eye requires time, and has to expend nervous and muscular energy. The amount of time and energy involved in this process will depend upon the quality of the lighting. If the illumination on the object is poor the eye may strain itself for several minutes, and then not be able to see clearly. Indeed, if the light is bad, visual effort in excess of the normal is largely wasted, because, as a rule, the strain of trying, instead of helping, actually reduces the ability to see. Under good lighting, on the other hand—under lighting, that is to say, which is as nearly as possible similar to average daylight in quality and quantity—the eye, in the absence of serious abnormality, functions quickly and easily.

During the war it was found that in good visibility an aerial observer could work uninterruptedly for seven or eight hours without appreciable strain or fatigue. He could instantaneously see things—bursting shells, traffic movements, etc.—at immense distances. Directly the light deteriorated, however, the speed and accuracy of the observer's work declined in a disproportionate fashion. Nor could he observe properly when looking towards the sun, unless it happened to be hidden behind clouds. Isolated shadows on a brilliant landscape

also made it impossible for the observer to see anything in the shaded areas. To use the industrial vernacular, the observer's production was directly and greatly affected by the quality of the lighting.

Of course, conditions in the factory or shop are very different from those of the aerial observer, but the influence of lighting is none the less definite and appreciable, although not always appreciated. The fact is that people have become so accustomed to insufficient or badly-arranged artificial lighting that they often cannot believe that anything better would be either possible or visually preferable. The man at the badly-lighted table or desk does not as a rule attribute his difficulty in seeing his work and the ache in his eyes and head to the proper cause. He blames his eyes, or puts the trouble down to overwork or indigestion. In nine cases out of ten the cause is simply that he has not enough light to see by, and that what there is is probably coming from the wrong direction.

In the factory and workshop the effects of bad lighting are economic as well as physical. It is generally true that to see badly is to work badly and slowly. If artificial lighting were everywhere as good as it might be, we should hear considerably less about the poor sight of the present generation and the poor efficiency of modern industry.

What, then, is good artificial lighting? How much light is necessary in order that we may see to the full extent of our visual capacity—which is, of course, a variable quantity? Obviously, we shall see best by a light which is similar to average daylight, since daylight is evidently the natural medium of sight. Now, average daylight is not brilliant summer sunshine, nor is it the misty gloom of the traditional November afternoon. It is the light we experience on what is usually called a dull day—not a dark day, but a day when the sun is hidden or obscured by high translucent clouds. In such a light as this one may labour uninterruptedly for many hours at the closest work without any feeling of eye-strain; that is, in a room with ample window space, or out of doors.

Two main characteristics are thus essential to the artificial lighting which shall emulate daylight: it must approximate to the latter in quantity or intensity, and it must be diffused uniformly about the room from a hidden or obscured source.

As to quantity, the average value of daylight in the ordinary room may vary between six and twenty foot candles. Most people think their rooms are well lighted at night if the intensity of illumination is two or three foot candles. This tremendous discrepancy must be corrected. In a room in which moderately close work is done the average general illumination should not be less than six foot candles, and, preferably, should be about ten foot candles. It is not possible to say precisely what size or number of electric lamps would be required in any particular room, because the local conditions, such as colour of walls, ceiling, etc., have a very large effect on the ultimate result.

It is also necessary to consider the equally important matter of diffusion and distribution. Everyone prefers (for working or reading) the diffused light of the cloud-screened sun to the brilliant direct rays. That is why artists like a north light. The sun itself cannot be seen from that direction, and even on a cloudless day the light is well diffused and uniform. Diffusion is of even greater importance in artificial lighting, because, although the modern electric lamp is not so brilliant as the sun, it is much closer to the eye,

and, in the absence of proper precautions, can only be avoided with difficulty.

In order to obtain lighting results of the kind indicated, something more than an appreciation of basic principles is required. The illumination must be sufficient, it must be diffused, and it must be well distributed. So much will be admitted by everybody; but there is no general method of ensuring these results which can be applied under all conditions. Everything depends upon the purpose, nature, and size of the interior to be lighted.

This is where the illuminating engineer comes in. He is in a position to assess the relative influences of each of these factors, and to decide upon the most effective means of lighting a particular room. For example, the illuminating engineers of the British Thomson-Houston Company, of Rugby, have designed a number of lighting appliances—reflectors, diffusing bowls, indirect fittings, etc., etc.—for use under varying conditions. Also they have worked out all the necessary calculations with regard to height, spacing, size of lamp, and the reflection coefficients of different-coloured ceilings and walls.

In other words, they have placed artificial lighting on a scientific basis. Just as one may exactly determine the number of thermal units necessary to produce a definite power output with a particular type of engine and boiler, so the illuminating engineer is now able, by measuring a room and noting the colours of the walls, etc., to say precisely what kind of equipment will be required to produce an average illumination of, say, ten foot candles.

THE AUCTIONEERS' AND ESTATE AGENTS' INSTITUTE OF THE UNITED KINGDOM.*

BY J. SEAGRAM RICHARDSON.

It is fitting that after a lapse of seven years the Institute's annual provincial meeting should be held in Newcastle-upon-Tyne. The Northumberland and Durham Branch cordially invited the Institute, to hold the meeting in Newcastle in 1914, and the renewal of the invitation in this present year of grace has caused the keenest pleasure to the members. Since our last provincial meeting, held in Folkestone in 1913, seven long years have passed—years the like of which this earth had never experienced in the history of the world.

For another and quite a different reason it is appropriate that the present meeting should be held in Newcastle—one of its distinguished citizens has only just vacated the Presidential Chair of the Institute. Without disrespect to any of his illustrious predecessors, whose work for the Institute during the war has been beyond praise, I may be pardoned for saying that Mr. Waite Sanderson's year of office will for ever be memorable, if for no other reason than that of the recent formation of the seven metropolitan branches, which owe their existence to his initiative.

THE COUNCIL'S REPORT, 1919.

It is satisfactory to note that our membership has been well maintained; nearly two hundred new members were elected during the year, the total membership at present being 3,425. With equal satisfaction we observe that, notwithstanding the remission of subscriptions to members on active service during the last few years, the Institute's finances are in a sound condition.

On September 30 last, to the regret of the Institute in general and of the Council in particular, Mr. Charles Harris, after thirty years of faithful and invaluable service, retired from the secretaryship. With him be carried our united wishes for his speedy and complete restoration to health, and for the enjoyment of his well-earned leisure. On the following day Mr. E. H. Blake, C.B.E., whose name is a household word in the profession, took

* From an address delivered at Newcastle-upon-Tyne on Thursday, June 10th, 1920.

over the responsibilities of the secretaryship. The Institute is to be congratulated upon having secured the services of a gentleman whose special gifts and wide professional experience render him peculiarly fitted for the post. Mr. Blake has made an admirable start, and although much is expected of him, I think it most unlikely that he will disappoint the high hopes with which his advent was welcomed.

As was only to be expected, the candidates at this year's examinations largely exceeded in number those who entered for this test during the period of the war. It is gratifying to record that of the 201 who recently offered themselves for examination, no fewer than 163 succeeded in satisfying the examiners.

It will have been observed that, in the annual report, reference is made to the good work which has been accomplished by the Institute's Employment Bureau. Through its aid large numbers of demobilised men have been resettled in the profession. I should like to see the Employment Register become a still more important feature of our activities.

Through its members, the Institute has been honoured by his Majesty. For valuable war services, the King has accorded distinction to many of our colleagues: Sir Howard Frank, K.C.B., Sir Anker Simmons, K.B.E., Sir William Wells, Mr. W. H. Bradwell, O.B.E., Mr. Arthur Geo. Dilley, M.B.E., and Mr. Ralph H. Brady, M.B.E., are instances among our own Council. Our secretary and many members of the Institute afford further examples of those upon whom distinctions in the various grades of the Order of the British Empire have been conferred in recognition of valuable public work.

No annual report would be complete without reference to the important activities of the branches, the number of which has during the year been increased from fifteen to twenty-three. The new branches are those I have already mentioned as having been formed in the London district, and one covering Bedfordshire, Hertfordshire, and such part of Middlesex as is beyond the Metropolitan area.

The evening sessional meetings have been resumed and a number of valuable papers have been read.

The meetings of the junior members have also been resumed, and in future their chairman and hon. secretary will take part in the periodical conferences which the Council holds with the branches.

REVISION OF THE ARTICLES OF ASSOCIATION.

One of the most important incidents of the year of office of my predecessor has been the revision of the Articles of Association. An innovation, by no means the least in significance, is the admission of women to membership of the Institute on the same terms as men.

The composition of the Council of the Institute has been remodelled. Under certain conditions, past presidents will remain ex-officio members of the council, and this small continuing percentage of experienced councillors will ensure in some degree a continuity of policy. The area of each branch will in future be entitled to representation on the Council, and, when a vacancy occurs, the committee of the particular branch affected will be asked to submit a nomination. This course has recently been adopted in the case of such of the new branches as were without representation.

While the finances of the Institute are sound, the heavy increase in the cost of printing and of other establishment expenses, and the pursuance of a progressive policy, made it imperative that action should be taken to augment our income. The Institute's present home at Russell Square has served its purpose; but it is no longer adequate. The value of the library, for example, is prejudiced by the lack of proper accommodation. Moreover, the present status of the Institute justifies our seeking a more central and important site for our headquarters. There is, however, another pressing reason: the University of London is considering the acquisition of a large site at the back of the British Museum and bounded on

the east by Russell Square. Our present building stands on this site, and we should be unwise to wait until we were compelled to take precipitate action in the matter.

Another matter of importance under this heading is the general "stiffening" of the conditions of eligibility for membership. At the end of next year, the doors of the Institute will be closed to new members except by examination, subject to a strong saving clause in favour of men whose membership will be of benefit to the Institute rather than to the individual.

The establishment of stringent rules of conduct for members, with provision for enforcement, is another new feature.

SCALE OF CHARGES.

In collaboration with the Surveyors' Institution, the Council issued at the end of last year a revised scale of charges. Many, however, feel that the greatly enhanced costs of establishment are not adequately met by the few slight increases provided. It is considered that the scale falls short of the standard which is necessary to meet present-day conditions. The suggestion that the charges should be increased by a uniform percentage met with but little support at the time, but other professional bodies have now adopted this course, and when the matter is reconsidered, as no doubt it will be in the near future, this suggestion may possibly receive further attention.

Steps will also have to be taken to secure a closer approximation, to those of the Institute scale, of the charges under the Scale of Commission adopted by the High Court. From time to time the Council has approached the authorities on this subject, but its efforts have met with no success. In the opinion of many, the time has now arrived when a further serious attempt should be made to convince the authorities of the necessity of a substantial increase in the so-called "Court Scale," which, strictly speaking, has no official sanction. A committee of the Institute is at the present time dealing with this matter.

THE COLLEGE OF ESTATE MANAGEMENT.

I hope, and I think there is every probability, that my year of office will see the actual commencement of practical work by the College of Estate Management.

The College will provide for the examinee, but it will also supply proper and adequate means of educating the student in the subjects of his profession, which is a somewhat different matter.

Provision will also be made, both in town and country, for those who have left their examination days behind them. Courses of lectures will be arranged on subjects of professional importance at the moment. How invaluable would such courses have been in the year 1910, when the members of the profession were groping in the dark, searching for a true interpretation of the now defunct Land Value Duties! How advantageous they would have been in regard to the abundant emergency legislation of the last few years!

THE LONDON AUCTION MART.

When, towards the end of 1918, the London Auction Mart was sold to the Bank of England, the Council instantly took steps to secure alternative accommodation, and arrangements were made for the temporary use of rooms at Winchester House, Old Broad Street.

Subsequently, after a careful review of the whole circumstances, a committee appointed by the Council authorised the preparations of plans and estimates of the cost of a new building. As a result, it was reluctantly concluded that it would be hopeless to attempt to build a new Mart under existing conditions.

More recently, the Council itself has decided to take the necessary steps to acquire a new auction mart, either by lease or purchase, and to restrict its use to members of the Institute. It is accordingly proceeding with the formation of the London Auction Mart Company, and an appeal for financial support will shortly be made to the London and provincial members of the Institute.

THE HOUSING PROBLEM.

The housing problem is too wide and involved for me even to summarise it satisfac-

torily. While considering the points that govern the problem, it is idle to ignore the fact that one of the main difficulties is the deliberate restriction of output, which is, for the moment, the settled policy of labour organisations governing the building trade. But this, unfortunately, is not the only limitation which is placing a serious obstacle in the way of providing the much-needed houses.

However necessary it may be in the interests of tenants, and in order to avoid aggravation of the present unrest, the restriction of rents is undoubtedly a serious drawback to house production. It is obvious that, so long as rent restriction prevails, it will act as a strong deterrent to the influx of capital into the building trade, and the exemption of new houses from the Rent Restriction Act does not, for obvious reasons, reassure the investors. How necessary capital is at the present time, and what delay is being caused by the nervousness of investors, are only too evident from the daily reports in the Press. The tendency of present legislation is all in one direction—that of frightening away capital from house-building operations.

THE OUTLOOK OF THE PROPERTY MARKET.

The immediate prospects of the property market can be described only as uncertain, but there are some outstanding features in the situation from which it is possible at least to draw conclusions. For several reasons I am disposed to think that values generally are not likely to fall in the near future.

One of the most important elements of the situation is the present cost of building, which is three times as much as in pre-war days. This is due to a variety of causes, prominent amongst which is the trades union policy of "limitation of output," a policy affecting both the cost of materials of which houses are built and the actual construction. Another reason is, of course, the fall in the purchasing power of the sovereign.

The only item of cost which has not advanced is that of the land upon which the houses are built. Some competent authorities hold that the value of developed building land has gone up by leaps and bounds, but my own experience is that, notwithstanding the greatly increased cost of construction of roads and sewers, there is—at least in the Metropolis—so much building land in the market, the development of which has been arrested by the Finance Act of 1909-10, by Mr. John Burns' Housing and Town Planning Act of 1909, and by the war, and there are so many owners anxious to realise, that there is no difficulty in buying such land at pre-war prices. Indeed, I doubt if there will be any substantial appreciation in value for some time. So far as undeveloped building land is concerned, the high cost of making roads and sewers will not only retard development, but will prevent purchasers from paying the pre-war value. In support of this I can cite instances of one or two estates, ripe for building, which can be bought at the present time for about one half of the Finance Act valuations.

In ground rents there has been a shrinkage of values in sympathy with that of all gilt-edged securities, no form of investment in property being more affected by fluctuations in the Funds and War Loans. But, at "times" prices, ground rents still attract purchasers, who find they can obtain from 25½ to 27 per cent. for their money in investments which, in view of the reversionary values, are continuously appreciating. The difficulty experienced by the public in understanding the provisions of the Finance Act of 1909-10, and the imposition of reversion duty, deterred many from investing in this, perhaps the finest real-property investment, and ground rents with early reversions became saleable only at sadly reduced prices. With the forthcoming repeal of the land duties, however, I think ground rents will gradually regain their lost popularity as a convenient investment where a fixed, certain income is desired.

For blocks of residential flats I am disposed to think there is a good time coming. Investors, for years, notoriously fought shy of such buildings. They discovered that the—

management of flats was a business, and that to make this business successful a large amount of skill and tact was necessary. No one knew this better than the estate agents themselves, who generally hesitated to recommend this particular class of property as a desirable mortgage security. For all practical purposes flats became almost unsaleable. Certainly in the metropolis no blocks of flats of any importance were sold under the hammer for years, until quite recently. It would have been a waste of time and money to offer them to auction.

Now things are different. Favourable influences have been at work. The Finance Act to begin with, and more recently the war, stopped building operations, and houses have become scarce. Owing to the employment of women in munitions' shops and in a hundred other fields of labour in connection with the war, what is known as the "domestic question" has become more acute. Housewives find it almost impossible to obtain assistance, and they envy the lot of their more fortunate friends who, housed in a flat, are in a much better position to "carry on." For it has been found that a servant-less existence in a flat can be made quite tolerable with the daily offices of the caretaker, and with occasional "outside" help which can still be obtained—for a consideration.

The demand far exceeding the supply, rental values of such premises have risen enormously. I know of some small flats in the West End letting before the war at £90 a year, which would now be snapped up instantly at three times that figure, if they were available. I can also speak of instances of other flats in the West End, the leases of which have been readily saleable at premiums representing four or five years' rent.

It may, therefore, not be unreasonable to assume that, when conditions become normal, present owners of residential flats will find themselves in possession of properties which will be in demand not only by tenants but by capitalists and others of a speculative turn of mind, who will be prepared to face the risk and the troubles of management in the hope of a high rate of interest on their outlay. Indeed, there has already been a "certain liveliness" in the market for this particular class of investment.

So far as agricultural land is concerned, there appears to have been little, if any, falling off in the desire of tenants to purchase their holdings. The agricultural industry, which is still the most important in the country, assisted by Government guaranteed prices for corn and by the high prices of produce of all kinds, is generally thriving. The nation has had to pay dearly for its former dependence on other countries for its daily bread, and it may be assumed that agricultural interests will continue to be safeguarded by some measure of protection. I think agriculture may confidently expect a continuation of its present spell of prosperity.

But whether or not capital values may suffer from threatened legislation designed still further to secure tenants at the expense of owners, is a question which time alone can solve.

REGISTRATION.

I desire now to invite your consideration of a matter with which, I think, it will be incumbent upon us to deal, not only in our own interest, but also in that of the general community. It concerns our practice in real estate, and inasmuch as nine-tenths of our members are engaged in this branch of our profession, I venture to think it is a subject of immediate interest to nearly every one of us. I refer to the question of registration of architects and agents dealing with real estate.

It will be within the recollection of most of you that in 1914 the Council of the Institute proposed a Registration Bill in Parliament. The registration therein proposed was restricted to architects, agents, and valuers of real estate, and you will observe at once the obvious reasons for this limitation. Our Registration Bill, therefore, was of necessity confined to these three professions. So far from attempting to promote a registration affecting every kind of auctioneer, the Bill was strictly limited to the most rare and valued dealing with real estate. Some of us have been inclined

to think that our next activity should be the promotion of steps to secure a Royal Charter. For many reasons I should be glad to see the Institute granted that form of recognition, to which its record of useful service fairly entitles it; but I would point out that a Charter, gratifying as it would be to ourselves, would do nothing to protect the public against malpractices on the part of undesirable practitioners. We shall be choosing the better part if we devote our efforts to securing a system of registration, designed to prohibit unregistered persons from practising. Success in this direction will provide a real security for the public whom we serve.

I was gratified to observe in the Press a few weeks ago a note to the effect that the Surveyors' Institution also realises the need for some system of registration. I hope that the measures initiated by us in 1914, and held in suspense during the war, may now be revived, and that in my year of office definite steps may be taken (and I trust in conjunction with kindred Institutions) to promote the objects I have briefly outlined.

ROYAL ENGINEERS' WAR MEMORIAL.

A Special Committee, representing all branches of the Corps of Royal Engineers, including Territorials and New Armies, appointed soon after the Armistice to draw up a scheme for the Royal Engineers' War Memorial, has decided that a proposal, now under consideration by H.M. Office of Works, to allot four sites on the Mall opposite Marlborough Gate for war memorials affords the most satisfactory solution for the monumental side of the Royal Engineers' Memorial. One of these sites has accordingly been applied for, and, if they become available, the four sites would be treated in one comprehensive architectural scheme. It is understood that the Cavalry, the Royal Artillery, and the Guards are considering the question of taking up the remaining three sites. Should the Mall scheme fall through, a memorial would be erected on a War Department site at the Corps headquarters at Chatham, near the Crimean and South African Memorial arches. In this case, competitive designs will be invited, with Sir Reginald Blomfield as assessor. Permission has been obtained to instal the Royal Engineers' Roll of Honour in the N.W. Chapel of St. Paul's Cathedral, where the National Memorial to Lord Kitchener is to be placed. The Chapel will be known as the "Kitchener Chapel," and it is intended to provide an ex-R.E. custodian to facilitate inspection of the roll.

The balance of the subscriptions to the memorial are to be devoted to giving educational assistance to the dependents of those killed or incapacitated in the war, the capital and interest thereon being utilised and the expenditure spread over a period of eighteen years. Small scholarships will be granted to help sons and daughters of the men to go on to technical and secondary schools; also to help sons and daughters of those who in pre-war days would have sent their children to a public school or similar institution.

The President of the R.I.B.A. has received a letter from Lieut.-General Ronald C. Maxwell, chairman of the Royal Engineers' War Memorial Committee, stating that, so far, the total subscriptions amount only to some £32,000. The Mall monument will cost at least £15,000, and the Roll of Honour in St. Paul's £1,000, leaving but £16,000 for education. General Maxwell therefore asks us to bring the matter to the knowledge of ex-R.E. architects in order that they may have an opportunity of co-operating by subscribing to the memorial and by spreading the information to all ex-Royal Engineers and relatives of the deceased with whom they may be in contact. Subscriptions should be sent to the Secretary, R.E. War Memorial, Royal Engineer Institute, Chatham.

A project for building a hotel at Birmingham for commercial is being discussed by the Commercial Travellers' Association.

Mr. J. B. P. Karslake has been elected chairman of the Metropolitan Water Board in the place of Mr. E. B. Barnard, who has resigned.

THE "DAILY MAIL" IDEAL VILLAGE.

All who were present at the turning of the first sod on Wednesday, and very soon many more, will congratulate the *Daily Mail* on its well begun ideal village at Welwyn, and the certainty that it will be a triumph well won for the benefit of the immense public whose interest in housing is such a keenly personal one.

The estate adjoins that of the Welwyn Garden City, and will be laid out to secure the beauty and comfort of rural life, with a village green and a church and public buildings near by, a parkway leading to the Garden City, and communal orchards and a recreation ground on the outskirts. It is anticipated that the inhabitants will be in residence by next spring, when the village is to be opened as an exhibition for the instruction of all interested in the building problem, and a means of judging the practical advantages of methods of construction ranging from ferro-concrete to compressed earth. The object of the promoters being to serve the interest of the community, and not to make a profit, it is believed that living will be cheap.

Mr. Thomas Marlowe, presiding at a luncheon, said the village would be a monument to the British scientific and industrial enterprise that has followed a great crisis. It would represent the beauty and comfort of home life, and would suggest ideas for scientific building on the devastated areas of Europe. A prize of £100 would be given for a sign for the village.

Viscount Hampden, who had previously turned the first sod, congratulated those concerned in the enterprise on their public spirit, and wished them success.

The Earl of Lytton said the country would watch the patriotic experiment with interest and sympathy.

It is desired in the main that the village should be made up of middle-class houses, of the type selling at £500 to £750 in pre-war days, but, of course, houses of this nature will necessitate the close proximity of gardeners' and chauffeurs' and working men's cottages. These latter will, therefore, be admissible in the case of firms specialising in these types. The Government subsidy will be recoverable in respect of all houses built in the village which comply with the conditions laid down by the Ministry of Health.

The following method of disposing of the houses is suggested. The land will be leased in consideration of a small ground rent to the tenants of the houses on a 999 years' lease, so that no money will have to change hands for the original land, except as and by way of ground rent, unless the tenant elects to commute his ground rent on a basis of twenty years' purchase.

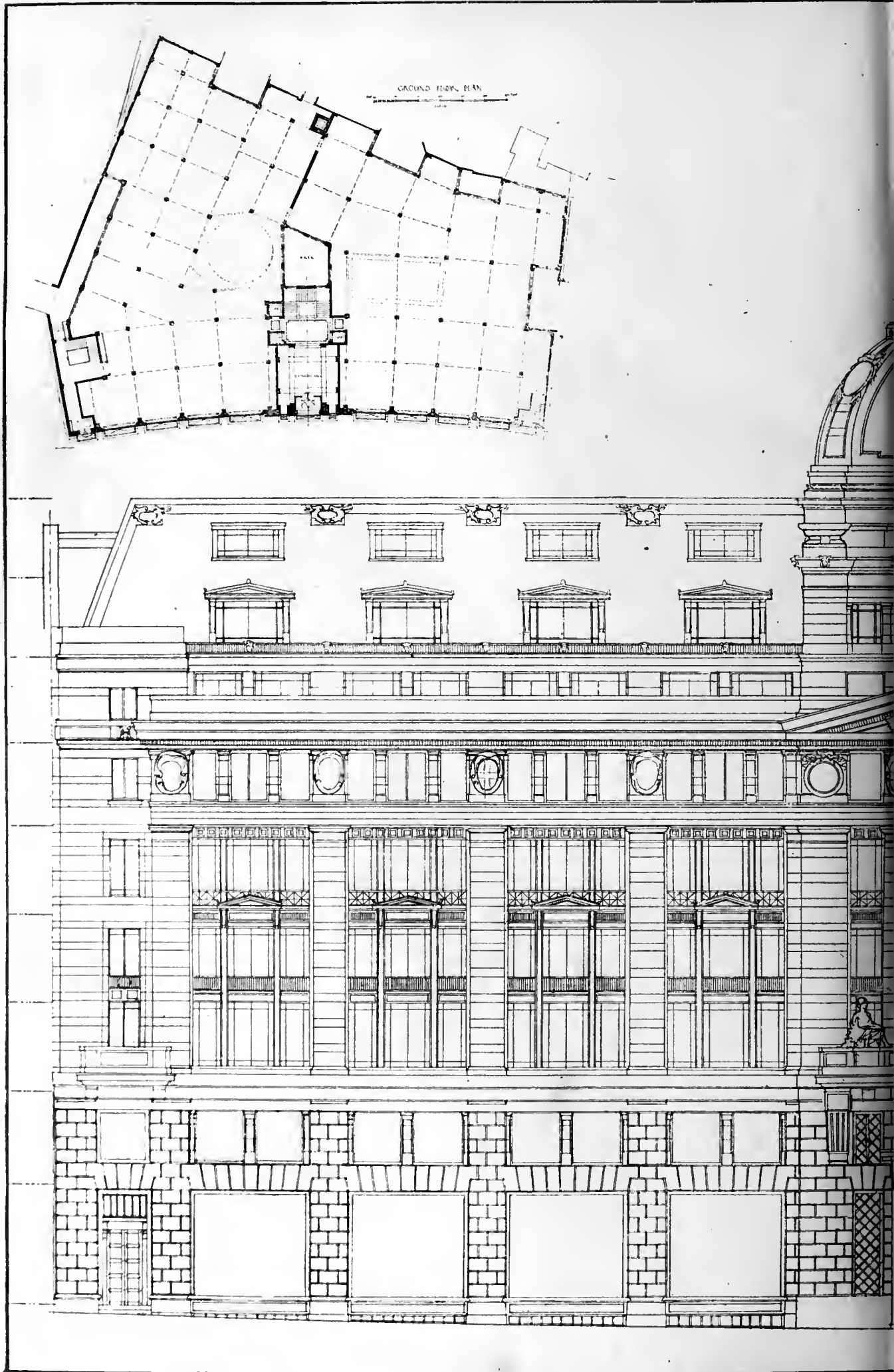
The exhibitor will be asked to fix a fair price for the house as it stands, and the purchaser will be asked to pay this figure, together with his appropriate share of the development charges. In the event of more than one individual desiring to purchase the house, it will be balloted for. First preference will be given to ex-officers, soldiers, sailors, and airmen and their dependents.

It is hoped to enter into an arrangement whereby the houses can be purchased on easy terms. In view of the circumstance that the land has been purchased as agricultural land at a very low rate, the cost including development charges for roads, drains, etc., will be exceedingly attractive.

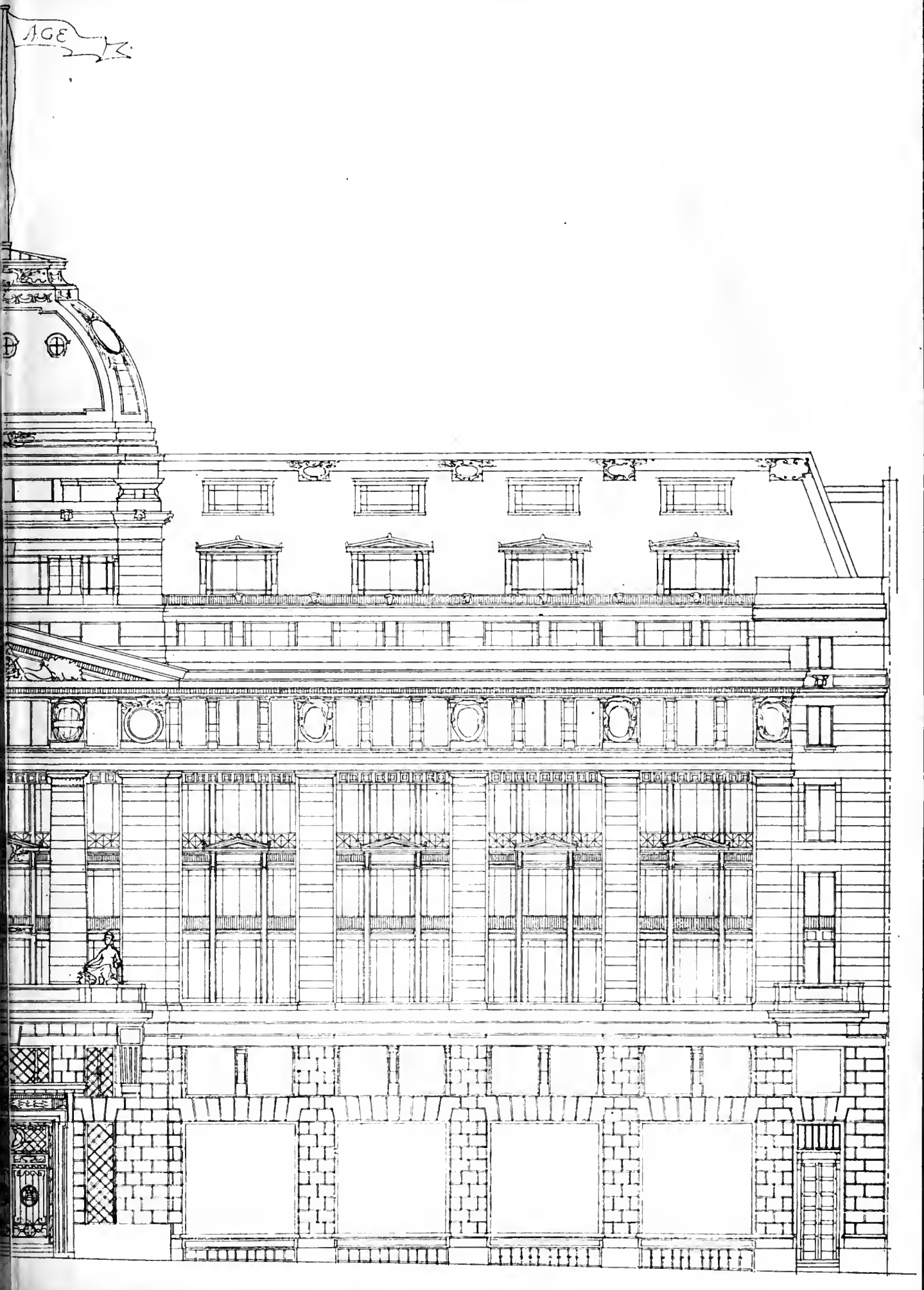
Full particulars as regards applications by intending exhibitors will be found in the page advertisement which appears in this issue, and a copy of the *Daily Mail* "Ideal Village Book" will be sent post free to any reader on application to the Secretary of the *Daily Mail* "Ideal Village," 130, Fleet Street, E.C.4. British builders will do well not to neglect this unique opportunity.

A protest against the recent tendency to enclose portions of the South Downs was passed at the final sitting at Eastbourne last Saturday of the South-Eastern Union of Scientific Societies. Professor E. Poulton, President of the Berkshire Archaeological Society, was elected President of the Union. An invitation for next year's congress, to take place at Reading, was accepted.

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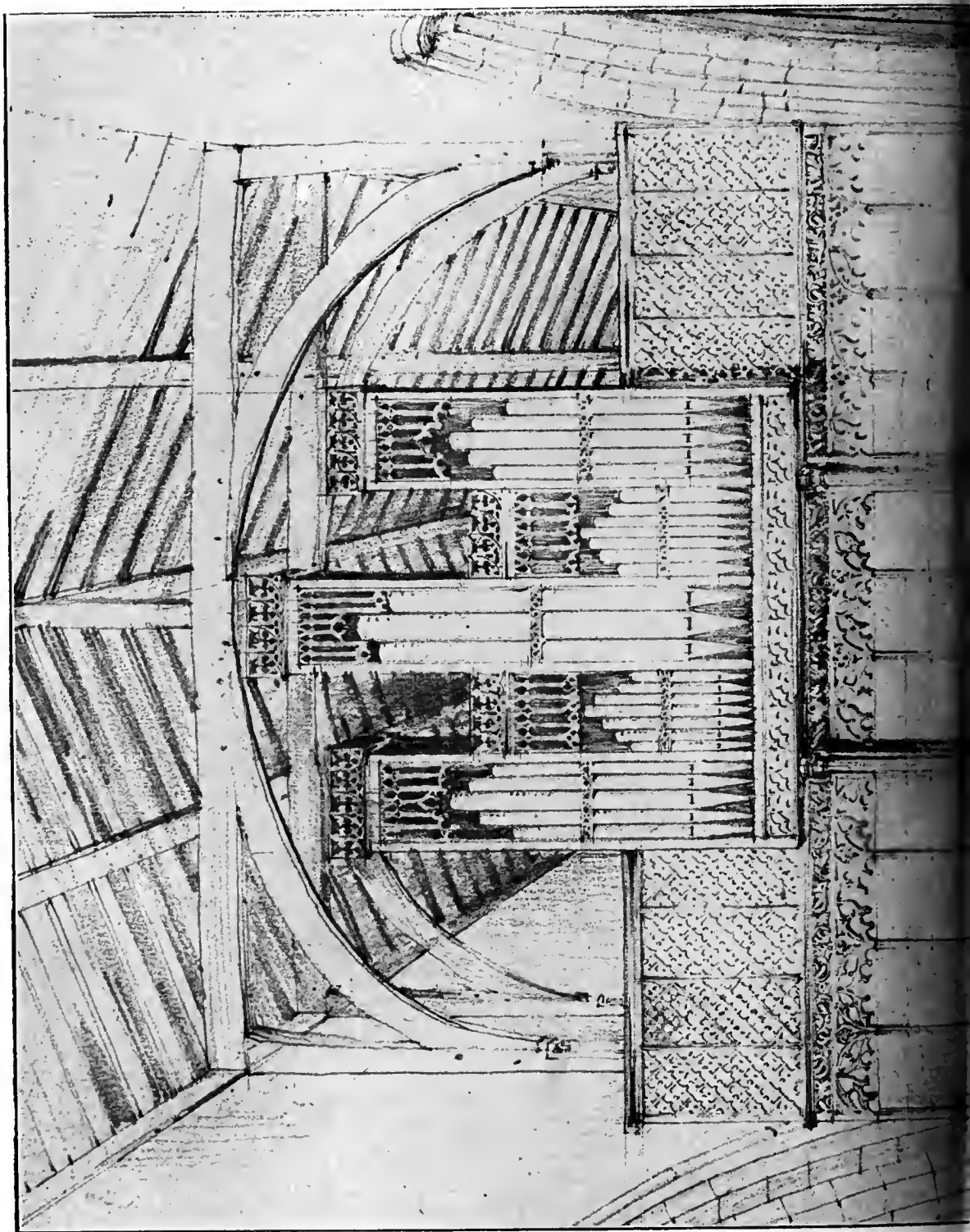


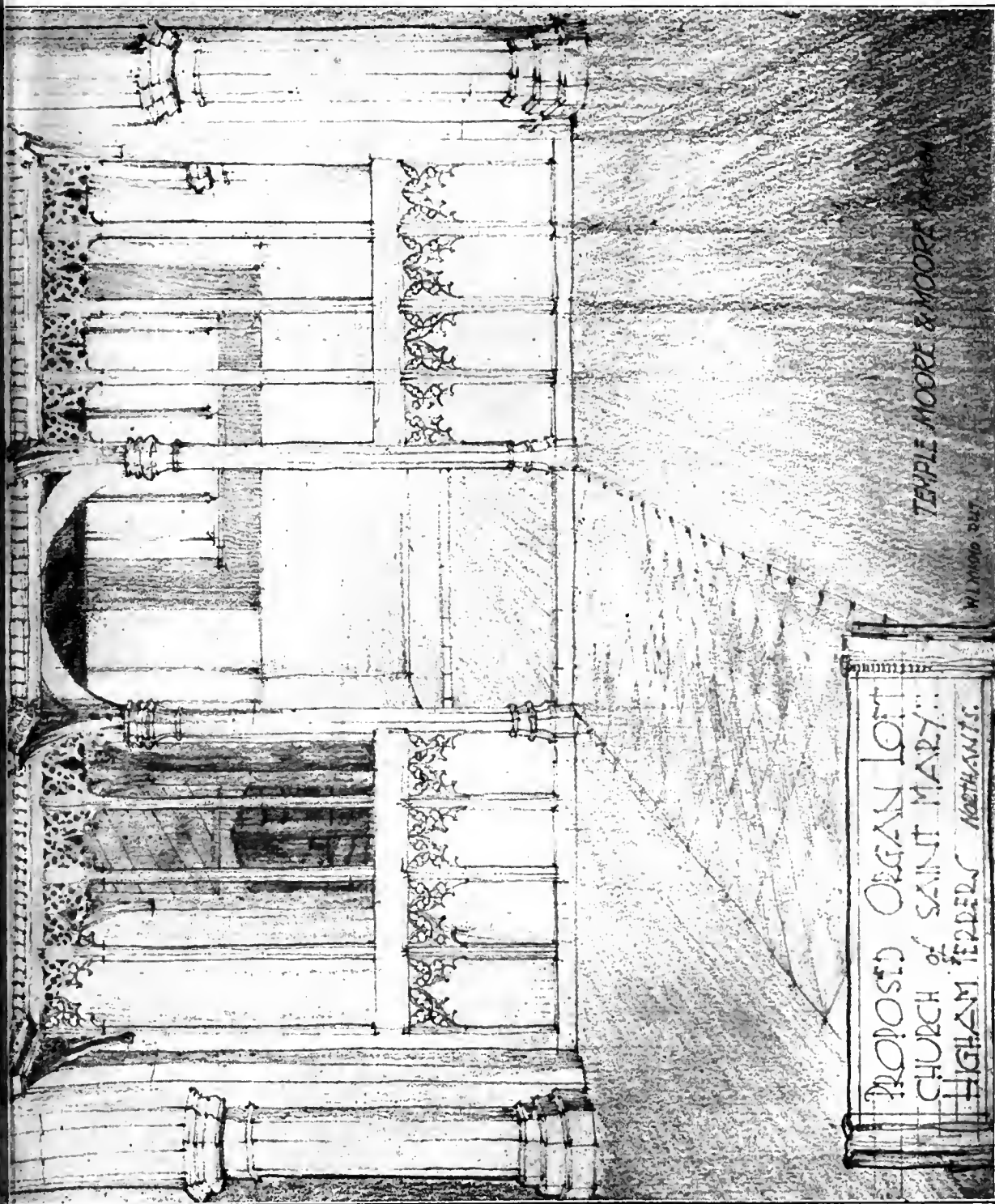
"ALDWYCH HOUSE" NOW IN COURSE OF ERECTION FOR



452-456

THE BUILDING NEWS, JUNE 11, 1920.





ORGAN LOFT, CHURCH OF ST. MARY, HIGHAM FERRERS, NORTHANTS.
Messrs. TEMPLE MOORE and MOORE, F.F.R.I.B.A., Architects.

Our Illustrations.

ALDWYCH HOUSE.

This building will occupy one of the few remaining vacant sites on the north side of Aldwych, with a frontage of 215 feet. It is being erected for "Agricultural and General Engineers, Ltd.," who will occupy several of the floors including the ground floor, which is planned as an extensive showroom, having an area of over 23,000 square feet, for the exhibition of machinery. The remainder of the building to be let as offices with storage and strong-room accommodation. The construction throughout will be steel frame and concrete, the whole being finished and equipped in the most up-to-date way. The architects are Messrs. Gunton and Gunton of Finsbury House, Blomfield Street, E.C.

NEW ORGAN LOFT, HIGHAM FERRERS, NORTHANTS.

The fine church of Higham Ferrers is of an uncommon plan, consisting of two naves of equal span. Some early fourteenth century woodwork remains, including part of an oak screen in the north nave, which formerly possessed a rood loft. This screen is incorporated in the new organ loft now being erected, though constructionally the old work is independent. English oak is being used throughout. A small stairway, hexagonal in plan, gives access to the loft. The work is being executed by Messrs. George Henson, of Wellingborough. Messrs. Temple Moore and Moore, F.F.R.I.B.A., being the architects. The drawing reproduced is now on view at the Royal Academy.

Building Intelligence.

ST. JOHN, N.B.—The new St. David's Church in St. John, N.B., occupies the site of two former church buildings which were successively destroyed by fire. The façade is of rock-faced Spoon Island granite, with tooled freestone trimmings. The style is Perpendicular Gothic. A narthex, 12 ft. 6 in. wide and 30 ft. long, entered by three doors, gives access to the main auditorium. This entrance, floored with 9 in. red quarry tile, with walls rough-plastered and panelled in brown ash and vaulted ceiling, is shut off at either end by a handsome brown ash and leaded glass screen from the stair halls, 12 ft. 6 in. by 20 ft. From the latter, stairs lead, by easy stages, to a gallery running the full width of the front, and having a seating capacity of 190. The main auditorium is 57 ft. wide and 80 ft. deep, with a transept on either side 27 ft. wide and 11 ft. deep. The woodwork of rafters, trusses, pulpit, pews, panelling, etc., is of dark brown ash, the effect of which is greatly enhanced by some fine carving, the work of Mr. John Rogerson, who, though now in his 83rd year, carved the capitals of the clustered columns at either side of the choir arch and transept arches, brackets at the base of the roof trusses, and the beautiful panels of the pulpit as his contribution to the church of which he has been a faithful attendant and office bearer for some seventy years. Opening off the auditorium are the choir room, 17 ft. by 26 ft., and the vestry, 15 ft. by 17 ft. In the rear is the Sunday-school building, now partially completed, and which makes provision for a main room, 35 ft. by 43 ft., which, by means of rolling partitions, can be enlarged to two parlours, one 16 ft. by 32 ft. and the other 18 ft. by 32 ft. Along one side of the main room are four classrooms, each 9 ft. by 11 ft., and library. The architect of the building is Mr. F. Neil Brodie, of St. John, N.B. The cost of the building, including the organ, was about \$120,000.

THE PROSPECTIVE COMPETITOR METHOD OF VALUATION OF PROPERTY.*

By M. L. BYERS, M.A.M.Soc.C.E.

(Continued from page 428.)

8.—THE RELATION OF DEPRECIATION AND OF APPRECIATION TO FAIR VALUE.

Depreciation is a lessening in value as compared with value under the basic condition (called "new"); depreciation is brought about by any cause which reduces profitability, present or prospective. Appreciation is the opposite of depreciation; it may be regarded as negative depreciation.

Solidification of roadbed, grassing of slopes, etc., adjustment of working parts of machinery, etc., reduce future maintenance costs; development of traffic increases net earnings; both, therefore, add to the profitability and thus produce appreciation in value.

Physical deterioration, obsolescence, and inadequacy affect profitability by, at some future time, increasing gross expenses as compared with the gross expenses necessary in the absence of such conditions and so produce depreciation in value. The usual remedial process is the replacement of certain portions of the original property at the cost of the expenditure involved in restoring original conditions. This expenditure is usually termed "maintenance cost." Under certain conditions, this cost matures at regular intervals in amounts which are not embarrassing. Under other conditions, the increased cost accrues over long periods of time until, at maturity, it assumes proportions which may produce disastrous results in three ways, namely:

The treasury of the enterprise may suddenly be called on for large sums which it may not be in a position readily to supply and which, therefore, might involve the enterprise in financial difficulties.

This gradual accrual may not become apparent in the ordinary annual reports of the corporation to its stockholders. These stockholders, as well as intending stockholders, basing their estimates of value of the property on the reported past net earnings, form an entirely erroneous conclusion, because they do not realise that the future earning power will be much diminished when it becomes necessary to make the renewals required on account of the heavy accruals of deterioration.

If the commodity rates are under regulation and subject to frequent adjustment, the fluctuations of earning power brought about by gradual accrual and sudden maturity of deterioration, cause an unequal distribution of the production cost among early and late purchasers of the product.

For these reasons it has become customary, from time to time, to include in operating expenses an amount for "depreciation," more or less approximating the annual accrual. These amounts of "depreciation" are included in current operating expenses and a book credit is set up, against which credit the actual expenditures to remove matured deterioration are charged as they occur. Sometimes, in addition to the mere bookkeeping, an actual fund is created, segregating the amount charged to "depreciation" from the other gross earnings of the corporations, thus establishing a more complete protection.

Various methods have been proposed for estimating the amount of accrual deterioration, which approximate more or less closely to the actual accrual. The object in each case is the same, namely, to distribute maintenance cost more uniformly than if only expenditures for replacement of matured deterioration were charged thereto.

It is evident that the item which is a final charge to maintenance expense is the cost of removal of deterioration (or "depreciation").

* This paper was not presented for discussion at any meeting of the American Society of Engineers, but written communications on the subject are invited for subsequent publication in *Proceedings*, and with the paper in *Transactions*. We reproduce the main portion, because, although conditions here may differ in details, it cannot but interest surveyors and valuers here at the present time to study the conclusions arrived at by a leading American authority.

tion") and not the deterioration itself, which latter is a condition and not an expense.

In the absence of removal, the present worth of the future cost of such removal is evidently the measure of the depreciation in value as compared with the value if the removal had already been completed, all other conditions remaining unaltered. It is to be observed that, in properties made up of great numbers of articles, as the ties in a railroad track, there is a constant tendency of the amount of deterioration—of the loss of useful life—to reach 50 per cent. and to remain constant at that level. Such deterioration in the property as a whole never is removed—the property is designed so as to be really in normal use-condition only when this status is reached—and there is, consequently, no future cost of removal to consider and of which to compute the present worth.

In the case of appreciation, removal thereof is neither necessary nor desirable; nevertheless, the production of the appreciation, whether voluntarily or involuntarily, has usually been accompanied, in some form, by cost; this cost is either chargeable to maintenance or operating expenses, or it must be regarded as a capital expense incurred in the building up of the property to its present condition. As a matter of fact, the cost of that appreciation which takes the form of solidification of roadbed and ballast, grassing of right of way, adjustment of working parts of machinery, etc., ordinarily enters into operating expenses in railroad accounting and can be segregated only with difficulty, if at all, from the other items of operating expense, making it difficult to treat as a capital expense item.

Under the "competitor" method suggested for finding the value of a property, the first step is to estimate that fair rate level which, within that reasonable time which capital would be willing to wait, will produce net earnings for the competitor equal to a fair return on the competitor's cost to date. In order to estimate this rate level, it is necessary to estimate, over a period of years, the gross and net earnings of the competitor. Whatever method of computing "depreciation" is in use on the property under valuation, should be applied to the estimating of the maintenance cost of the competitor during the period of years used for the determination of the fair rate level. Having in this manner determined the fair rate level, the next step is to estimate the profitability, present and prospective, under the application of such rate level, of the property under valuation; this involves the estimating of the gross and net earnings, under such rate level, of the property under valuation. Here, again, the same rules with regard to the computation of "depreciation" should be applied to the estimation of operating expenses during such period, bearing in mind, also, the physical condition of the property and the probable desirability of increasing or decreasing the normal "depreciation" rate on account of such physical condition.

Attention is called to the fact that it is not directly the physical condition of the property which affects its value, but, on the contrary, it is the effect of such physical condition on present and future operating expenses which influences value. It is probable that, under the valuation method proposed, it does not seriously modify the result whichever of the various "depreciation" rules is adopted in the computation, provided the rule is sufficiently accurate to produce, in the long run, a close approximation to actual maintenance expenditures, and not, on the contrary, gradually pile up a considerable surplus or deficit.

9.—THE RELATION OF ABANDONED PROPERTY TO FAIR VALUE.

As it is the value of the property at present used for corporate purposes which is to be obtained, and as the value of such property is entirely independent of the amount of the property abandoned, it is evident that such abandoned property is to be ignored in arriving at a value.

However, if the abandonment resulted from unavoidable causes, such as normal obsolescence, etc., the relation between the cost

of the property abandoned and the cost of the remaining property still in use is of interest, because of the light it throws on what is a fair rate of return in the industry in question. Fair rate of return is made up of two factors, rate of return in the absence of risk, and insurance premium to cover risk. The relation between abandoned property and the total property furnishes an indication of the degree of risk. Also, the subject is of considerable interest in connection with the establishment of rules governing the application of depreciation.

It may be well here to remark that it is only the value of the remaining useful life which is abandoned, and that, in practice, this is generally reduced to a minimum by neglecting repairs for some time previous to abandonment, and while still keeping the property in service.

10.—THE RELATION OF AIDS, GIFTS, GRANTS, AND DONATIONS TO FAIR VALUE.

In practically all cases, the object of gifts, grants, etc., in whatever form these have been made, has been to induce capital to undertake an adventure in which the risk was otherwise prohibitively high. This additional inducement was really in the nature of a capitalised payment of an extraordinary insurance premium.

If, in valuation for the purpose of determining fair return, the value of the gift is merely to put the giver in the position of being a silent partner in the business without in any way reducing the risk of the other partners; yet this reduction of risk was the primary object of the gift.

For example: The estimated cost of a project is \$10,000,000, and it is further estimated that, under the commodity rates which must be used, the profitability of the enterprise will not be more than \$400,000, and may be less. As it is impossible to interest capital in an uncertainty with a maximum return of only 4 per cent., certain outside parties, expecting great indirect benefit from the development of the industry, donate \$5,000,000 to the corporation formed therefor. This means that the stockholders will be obliged to contribute only \$5,000,000 instead of \$10,000,000, while the plant which they will own will have cost \$10,000,000 to produce. On the assumption that they will be permitted to have the entire return from the \$10,000,000 investment, the probable return on the stockholders' investment of \$5,000,000, therefore, becomes 8 per cent. If, on the contrary, the industry is to be subject to regulation, and, because of the \$5,000,000 donation, the rates are to be cut to the point where only \$200,000 is allowed to be earned, it is evident that the stockholders have not been benefited in any way by the donation, for their risk has not been reduced in intensity, and they are still limited to a prospective maximum of 4 per cent. on their investment.

Under the method of valuation suggested, it is evidently of no concern to the prospective competitor whether the existing enterprise bought, begged, or stole its now owned property. It is the cost of developing and operating the competitor's plant which must determine the rate necessary to enable it to compete. Fair value of the property under valuation will be determined by its profitability at this rate.

11.—THE RELATION OF PROPERTY OWNED BUT NOT USED BY THE OWNER IN THE PUBLIC SERVICE TO FAIR VALUE.

It is self evident that such property should not be included in the value on which fair return is to be allowed. It is to be regarded merely as an investment in which the public has no interest, and any returns from which should be excluded from operating revenue.

It is frequently necessary, however, especially in rapidly growing communities, to look well ahead of the present needs. This sometimes raises the question whether the property is or is not properly to be included in the valuation.

12.—THE RELATION OF PROPERTY USED BUT NOT OWNED TO FAIR VALUE.

The value of such property to the user is reflected in the net earnings directly and indirectly

accruing from such use. Ordinarily, the gross earnings from such a property are included with the gross earnings from other properties in such manner as to make segregation practically impossible. Under such circumstances, the simplest method of handling for valuation purposes is to include in operating expenses the rental of such property, excluding the item entirely from the reproduction inventory; in some special cases it may be necessary to consider whether or not the terms of the rental are fair, or whether they represent unwise and improvident management, the results from which the public does not subscribe to.

Where it is possible to segregate from other sources of revenue the earnings accruing from the rental of a property not owned but used in the public service, and where the property bears a sufficiently important relation to the remainder of the property under valuation, then it can be valued in the same manner as if owned and used. In this case, however, the rental must be excluded from consideration as earnings.

13.—THE RELATION OF PROPERTY OWNED AND USED JOINTLY TO FAIR VALUE.

Recalling that the only true measure of value is profitability, it is evident that the value to each of the users of a property utilised jointly is measured by the profitability (gross earnings less gross expenses) accruing to the user from such property, regardless of the terms of ownership. Ordinarily, as the gross earnings accruing directly and indirectly from the use of such a property cannot be segregated from those accruing from other sources, the simplest method of valuation is to include in the gross expenses of each owner its proportion of the expenditures incurred on account of such use. The reproduction cost of the property is pro-rated to the different owners on this or other equitable percentage basis. Where the jointly used property is separately operated and the terms of ownership include the basis of distribution of profit or loss from such operation, the valuation of the jointly used property can be independently made and pro-rated to the users on the basis of the contract basis of distribution and profitability.

(To be continued.)

Mr. Charles Garlick, sen., of Coventry, builder and contractor, for seven years secretary and for seventeen years president of the Coventry Master Builders' Association, has left £11,734.

After a strike of many weeks' duration, seriously handicapping building operations, brickmakers in the Nottingham district, where some of the largest kilns in the Midlands are located, decided to resume work last Monday on the employers' offer of an additional penny per hour.

Over and above the difficulties attending the production of this and similar journals, to which we alluded a fortnight ago, the printers' bill was advanced last Saturday by another 11 per cent., making within a fraction of 150 per cent. above pre-war charges, and paper has gone up this month by another three-farthings a pound.

During alterations at the old Belstone Rectory on Dartmoor it was discovered that a building which was used as a stable was originally a chapel. Windows which had been walled up were all built in the form of pointed arches, and some were filled with very old cathedral rolled glass. The old windows are being reopened and the stable converted into a hall.

The Urban District Council of Ballymena invite designs for a new town hall and municipal offices. Cost not to exceed £30,000. The competition is open to architects "recognised by the profession," and a premium of £100 is offered for the design placed first in order of merit. Mr. W. Kaye-Parry, F.R.I.B.A., Past-President of the Royal Institute of Architects of Ireland, is the assessor.

Addressing the Rhyl Advertising Association, Mr. Ashfield, president, urged the members to use newspapers more extensively for securing visitors. He said the Association found the Press the best and most profitable form of publicity, and spent more than half its income on newspaper advertisement. No other form of advertising could compare with it, but it must be continuous.

Correspondence.

NATIONAL HEALTH INSURANCE ACT.

To the Editor of THE BUILDING NEWS.

Sir,—For the information of architects and surveyors, perhaps you will be good enough to allow me to call attention to the provisions of the 1920 National Health Insurance Act, under which employers and employed are required to pay an additional contribution weekly.

Contributions increased from 7d. to 10d. for men (employer pays 5d., man 5d.).

Contributions increased from 6d. to 9d. for women (employer pays 5d., woman 4d.).

Sickness benefit increased from 10s. to 15s. a week for men.

Sickness benefit increased from 7s. 6d. to 12s. a week for women.

Disablement benefit increased from 5s. to 7s. 6d. a week for men and women.

Maternity benefit increased from 30s. to £2.

This Act comes into force on July 5, 1920.

F. R. YERBURY, Secretary.

The Architects' and Surveyors' Approved Society, 35, Bedford Square, W.C.1.

June 7, 1920.

A new church is to be built at Belclare, Tuam, from the designs of Mr. R. M. Butler, architect, Dublin.

A suggestion that one of the old City churches now condemned should be utilised for the purpose of religious drama was put forward at a conference at the Society of Arts last Saturday.

The wages dispute at the cement works of Messrs. Greaves, Bull and Lakin, Bishop's Cleeve, near Leamington, has been settled. The employees have agreed to accept: men 10s. a week, boys 5s., the increases to become operative as from May 1.

Sir Alfred Mond, First Commissioner of Works, states that he is considering the appointment of a Committee to advise as to whether the powers of the existing Ancient Monuments Commission should be widened to extend protection to cathedrals and parish churches.

Two Labour members of the Manchester City Council, acting on behalf of the Tenants' Defence Association, took forcible possession on Monday of a house which has been empty for three months, and assisted in placing in it an ex-soldier, his wife, and three children, with their furniture.

Six people were injured as the result of the collapse of six three-storied houses in St. Paul's Road, Highbury, London, N., late last Sunday night. A young man of about twenty-four or twenty-five, who was injured, has not yet been identified. He is lying in the Great Northern Hospital in a serious condition, with a fractured skull and a fractured ankle. It is thought that the air raids during the war may have had the effect of loosening the mortar, and that the railway which runs behind the houses may have been a contributory cause.

The Edinburgh Architectural Association visited Hopetoun House last Saturday, the seat of the Marquis of Linlithgow. Hopetoun House is one of the finest of the great mansions of Scotland, was erected at the end of the seventeenth century from designs by Sir William Bruce, architect, and subsequently altered and enlarged a few years later by William Adam, architect. Dr. Thomas Ross, F.S.A. (Scot.), by means of a series of plans, explained the various alterations and enlargements that have been made to the original mansion.

At a meeting of the Sleaford Rural Council on Monday it was decided that all tenders be deferred (except the houses in course of completion) until the Ministry of Health gave its opinion on the cost of the dwellings, the council holding the view that not more than 10s. per week rent, including rates, would be obtainable. Mr. Foster said an economic rent for the houses would be £80 or £90 a year, and they did not expect people in the country would want to pay that. The chairman (Mr. S. E. Dean) said the cost of building had increased to such an extent that it was useless to proceed further.

"DECOLITE" FIRE-RESISTING FLOORING.

The house constructed without regard to the health or convenience of the inhabitants—commonly known as the jerry-built house—it is hoped is a thing of the past; and, although it would be of advantage if houses were now erected with something like the mushroom rapidity that characterised pre-war building operations, there is much to be gained in approaching the problem with deliberation and care.

Modern houses are planned in accordance with the principles of hygiene, with labour-saving methods and devices incorporated, so that the housewife is enabled to run her home on the commonsense lines indicated by domestic economy. The housewife in the old type of dwelling might justly have said, misquoting Shylock, "Drudgery is the badge of all our tribe"; but the commendable tendency at the present time is to enable the greatest cleanliness to be practised without soul-deadening drudgery.

Floors deserve and require special attention, as they not only represent a large area, but they are the chief collectors of dust and dirt. Plank floors, though the most common in use, are far from hygienic, as dirt and micro-organisms harbour in inaccessible cracks and crevices, particularly where floor and skirting boards meet. Messrs. Bell's Asbestos Co., Ltd., however, have recently submitted to us samples of their "Decolite," fire-resisting flooring material, which is a decided advance upon wood or cement floors, whether for houses, institutions, factories, or other buildings. "Decolite" floors are made from a quick-drying composition which gives a hard, non-slippery surface, free from joints and cracks. It is warmer and more resilient than concrete and similar materials, is fire-resisting and waterproof, and has the appearance of cork linoleum. Moreover, under actual wearing conditions, the friction of treading does not grind any surface dust from "Decolite."

"Decolite" can be used for dados as well as for floors, and, therefore, all angles and corners between walls and floor can be obviated—with consequent increase of facilities for dusting and thorough cleaning. "Decolite" is of decided hygienic and economic advantage, and it may confidently be recommended for flooring purposes as well as for the modern improvement of our homes. "Decolite" is exhibited in the Museum of Hygiene, at 33 and 34, Devonshire Street (Harley Street), London, W.1, and can be seen and demonstrated any day between 10 a.m. and 5 p.m., Saturdays, 10 a.m. to 1 p.m.

Owing to the expiration of the lease of their offices in Bloomsbury Street, Messrs. Collett and Hamp, architects, have removed to 20, Red Lion Square, Holborn, W.C.1, and the new telephone number will be Holborn 404.

The following have been elected Fellows of the Society of Antiquarians of London:—Mrs. Strong, Miss Rose Graham, Canon T. A. Lacey, the Rev. A. H. F. Boughey, Colonel Pemberton, Messrs. W. G. Benham, H. Chisty, H. P. B. Downing, H. J. Fleure, T. E. Goodyear, C. Johnson, F. Lambert, and E. H. Minns. Dr. Aimé Rutot, of Brussels, has been chosen as an honorary fellow.

The Royal Academy of Arts is about to elect two Turner annuitants. Applicants for the Turner annuity, which is of the value of £50, must be artists of repute in need of aid through unavoidable failure of professional employment or other causes. Forms of application can be obtained by letter addressed to the Secretary, Royal Academy of Arts, Piccadilly, W.1. They must be filled in and returned on or before Wednesday, June 30, 1920.

The death of Mr. John Johnson, of 9, Queen Victoria Street, E.C., is recorded. He was elected an associate of the R.I.B.A. in 1881 and had an extensive practice, including several Nonconformist places of worship, schools, and public buildings, most of which were won in open competition. Mr. Johnson was a rapid sketcher and excellent draughtsman. He did some of the architectural drawings for the books of the late Edmund Sharpe. He was elected a member of the Architectural Association in 1863, and was the only member who attended all the annual A.A. excursions which were held up to the outbreak of the war.

Our Office Table.

"In comparing the oxygen process with normal practice, apart from the saving of fuel, the cost of plant for carbonising would be greatly reduced, and thus the fixed as well as the running cost of gas production would be brought down," was the contention of a paper by Messrs. H. J. Hodsman and J. W. Cobb on "Oxygen in Gas Production" read before the Institution of Gas Engineers last week. The authors argued that carbonisation of coal for gas production would probably never reach the ideal system, and other methods, in which the heat was produced in the charge itself, were more promising, such as the generating of heat for carbonisation by the use of a regulated supply of oxygen. The complete gasification of coal might then be attained with the maximum of thermal efficiency. If it were possible to put practically the whole of the nation's coal fuel into gaseous form, with little loss, in an economically sound manner, an important saving of transport and fuel would be effected. There were grounds for believing that in the future the price of oxygen would not be an obstacle to its use for gas-making processes. If the oxygen method advocated were technically and commercially feasible, the gas industry would offer scope for large consumptions, and provide conditions conducive to cheap production of oxygen.

Judgment was delivered last Saturday by Mr. Talbot, K.C., Chancellor of the Diocese of Winchester, in regard to an application for a faculty for the removal of a crucifix set up on consecrated ground adjoining the Church of St. Nicolas, Guildford, as a memorial to Lieut. Ommaney, who was killed in the war. The Chancellor said he was satisfied that there was a great body of opinion in the parish, amounting certainly to a majority of those who took any real interest in the matter, who were in favour of the crucifix being allowed; that the opposition to it had been to a great extent stimulated from outside; and that many of the parishioners who signed the petition against it were under the erroneous impression that it was illegal. Under all the circumstances he was prepared to decree a faculty for the removal of the crucifix from its present position facing the High Street to a spot marked on the plan, on condition that the faculty was acted on within three months. Mr. Dowdall, K.C., for the petitioners, intimated there would be an appeal.

A very useful small quarto volume on "Furniture for Small Houses," by Mr. Percy A. Wells, the head of the cabinet department of the L.C.C. Shoreditch Technical Institute, is issued at 12s. 6d. net by B. T. Batsford, Ltd., containing fifty-six plates reproduced from photographs and working drawings of simple designs for useful articles of household furniture, together with thirteen smaller diagrams in the text. The designs include tables, dressers, and sideboards, chairs, bedroom furniture, and miscellaneous articles, including bookcases, cabinets, hat-stands, what-nots, etc. A complete set of the things illustrated has been made at the Shoreditch Technical Institute, suitable for a five-roomed cottage, including a living-room, parlour, and three bedrooms. Full details are given of all the work described, and their construction should be neither costly nor difficult either for the amateur joiner or the small manufacturer, and there is no article which cannot be produced by modern methods—hand or machine.

The thirty-second annual report of Bell's United Asbestos Company, which will be presented at the meeting to be held at the Cannon Street Hotel next Wednesday, at 2 p.m., is a highly satisfactory one. The results of the year's operations, ending December 31, 1919, is a net profit of £44,589 9s. 2d., which, including a carry forward of £9,556 11s. 2d., amounts to £54,146 0s. 4d. Interim dividends were paid during 1919 amounting to £8,800, leaving £43,546 0s. 4d. for appropriation. The directors recommend the payment on June 17, 1920, of a dividend on the ordinary shares (numbered 1 to 140,000

inclusive) of 1s. and 6d. per share and a bonus of 1s. per share, which, with the interim dividend of 1s. per share paid on October 21 last, makes a total distribution of 17½ per cent. for the year, and also that the sum of £26,046 0s. 4d. be carried forward. The sum of £10,000 has been reserved from profits towards prospective liabilities for Imperial taxes. The results of the past year's trading are again satisfactory, and all departments of the company's factory are well employed. This issue of new ordinary shares in November last was largely over-subscribed. The directors have recently acquired control of Potters Asbestos Co., Ltd., of Rochdale and Littleborough, by the purchase of all the shares of that company. In order to make further provision for the housing of the company's employees at Harefield and to obtain the financial benefits of the Government housing scheme, a society named "Belfry Garden Village, Ltd.," has been registered under the Industrial and Provident Society Acts.

CHIPS.

Mr. W. Ransom, assistant city surveyor, has been appointed city surveyor and deputy city engineer of Worcester.

Mr. Walter Smith, of City Road, Norwich (President of the Norwich and District Master Builders' Association), has been successfully balloted for and duly elected to an associate membership of the Institute of Builders.

According to a report made by the Association of Corkwood Manufacturers of Portugal, the total world production of corkwood is estimated at 396,832,000 lb., of which 45 per cent. is produced in Portugal, 30 per cent. in Spain, 5 per cent. in France and Italy, and 20 per cent. in Algeria and Tunis.

Sir A. Mond, First Commissioner of Works, asked by Sir M. Conway whether it was within the power of the Ancient Monuments Commission to schedule some of the more important of the churches in the City of London now threatened with destruction at the hands of the ecclesiastical authorities, replied in the negative.

A tablet, in memory of 103 men of the parish who laid down their lives in the late war, was unveiled last week in St. Peter-at-Gow's Church, Lincoln. It has been designed by Messrs. Temple Moore and Moore, of Hampstead, London, and gilded and painted by Messrs. Head and Sons, of Colchester, the woodwork and carving having been executed by Messrs. Thompson, of Peterborough.

The question of direct labour for the joiner work on housing has been again before the Housing Committee of the Edinburgh Town Council. Representatives of the joiners and the Trades Council were present at the meeting, and a letter was submitted from the contractors stating that they saw no useful purpose in discussing the question with the committee. The committee decided to take no action.

A special service took place at St. Peter Mancroft Church, Norwich, on Sunday week, when two of the war memorials were dedicated. One is a sanctus bell hung in the south-east turret over the high altar, and the other a bronze crucifix, with six bronze tablets, affixed to the disused Jacobean door that used to give access to the north transept. The tablets are inscribed with forty-eight names of men of the parish, and others closely connected with the church, who fell in the war.

Said Dr. L. P. Jacks, the editor of the *Hibbert Journal*, last Saturday, at the Conference of Religious Teachers: "A leading manufacturer said to me the other day: 'We know it is madness; we know that Nemesis is waiting for us just round the corner; but we can't help ourselves. It is the only way to carry on from day to day. We are in a vicious circle, and all of us, employers and employed, are being swept round and round by a cyclone which we have no power to resist.'"

At the close of the annual meeting of the Norwich Union Fire Insurance Society last week, in Surrey Street, Norwich, a gathering assembled in the big office downstairs, where has been erected a memorial of the members of the staff who gave their lives in the great war, and also of those who joined one or other of the services and did "their bit" for the country. The memorial designed from drawings supplied by a member of the Head Office staff (Mr. E. S. Bertram Steward), consists of an English fumed oak screen with archway (leading from the main office at Surrey Street to the directors' corridor), and has been treated in the classic style.

FOR

Olivers'**Seasoned****Hardwoods,**

APPLY TO—

WM. OLIVER & SONS, Ltd.,
120, Bunhill Row, London, E.C.**TENDERS.**

Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

BARKING.—For 80 houses on the Eastbury estate, for the Barking Urban District Council:—
Seymour Construction Co. £76,690 0 0
Recommended for acceptance, subject to modification.

BENTLEY.—For 142 houses, for the Urban District Council.

Accepted tenders:—Contract divided between Leadley (Asker), W. Jenkinson (Bentley), and T. H. Wilburn (Doncaster); for a five-room house with bath, etc.; the lowest agreed figure is £1,620 for a pair, rising to £1,930 per pair for the best type with six rooms.

BISHOP STORTFORD.—For 10 houses on the London Road site:—

Markwell, E., Bishop Stortford. £8,533 17 6
Accepted.

HUNTINGDON.—For houses, for the Rural District Council.

Accepted tenders:—Eight houses, Alconbury, Allen and Son, £8,557; six houses, Sawtry, Allen and Son, £5,146; four houses at Great Stukeley, Shackray and Co., £5,236; six houses, Woodwalton, Page and Son, £5,776; four houses, Great Raveley, Page and Son, £4,554; four houses, Little Stukeley, Shackray and Co., £3,256; two houses, Buckworth, Allen and Son, £1,726; four houses, Upton, Allen and Son, £3,452; four houses, Little Raveley, Page and Son, £3,388; four houses, Alconbury Weston, Allen and Son, £3,268; six houses, Hartford, Pearson and Wright, £5,034.

LONDON, N.—For alterations at the Stamford Hill Stores Depot, for the London County Council:—

White, John Edward, 89, Newington Butts £1,809 0 0
Mather, John C., 33, Northampton Street 1,558 0 0
Watts, G. N., 147, High Street, Notting Hill Gate 1,520 0 0
Tender accepted.

PORTSMOUTH.—For converting the Baptist Chapel, Commercial Road, into a training centre, for the Education Committee:—

Tanner, J. £7,145 9 0
Recommended for acceptance.

WESTON-SUPER-MARE.—For bungalow, for Mr. G. Charlton, at Weston-super-Mare. T. B. Ball, A.R.I.B.A., Weston-super-Mare, architect:—

Addcott, C., and Son, Locking Road, Weston-super-Mare £1,080 0 0
Accepted.

WESTON-SUPER-MARE.—For dwelling-house, for Mr. H. Thompson, at Weston-super-Mare. T. B. Ball, A.R.I.B.A., Weston-super-Mare, architect:—

Sprake, G., Ventnor Villa, Milton, near Weston-super-Mare £1,450 0 0
Accepted.

WINNINGTON.—For 33 type A houses and 236 type B, on the Winnington site, for the Northwich Urban District Council:—

Northwich and District Building Trade Employees' Association, £745 per house, type A; £870 per house, type B.

WINCHMORE HILL (Middlesex).—For two additional classrooms at the Council School, Highfield Road, for the Middlesex County Council. H. G. Crothall, P.R.I.B.A., Guildhall, Westminster, S.W.1, county architect:—

Lawrence, W., and Son	£2,498	0	0
Brand, Pettit and Co.	2,477	0	0
Lacey, W.	2,450	0	0
Mattok Bros.	2,300	0	0
Knight, H., and Son	2,267	0	0
Fairhead, A., and Son	2,264	0	0
Monk, A.	2,248	0	0
Nesby Bros.	2,079	0	0

*Recommended for acceptance.

WOODBRIDGE.—For 14 houses, for the Urban District Council:—

Cross, Felixstowe £14,581 0 0
Accepted subject to modification.

LIST OF TENDERS OPEN.

June 15.—For 12 cottages (Scheme 4) at Northchurch; eight cottages (Scheme 5) at Potton End. —For the Berkhamsted Rural District Council.

W. B. Hopkins, A.R.I.B.A., Dunsell Rise, Northchurch, architect. —Tenders to A. W. Vaisey, clerk, 215, High Street, Berkhamsted.

June 15.—For a kitchen baking oven at Enfield House, Chase Side, Enfield. —For the Edmonton Board of Guardians. —Architect, J. C. S. Mumery, 34, Bloomsbury Square, W.C. —Tenders to the clerk to the guardians, White Hart Lane, Tottenham, N.17.

June 16.—For houses in connection with the Witton housing scheme. —For the Northwich Urban District Council. —Architects, Powles and King, Northwich. —Tenders to J. A. Cowley, clerk, Council House, Northwich.

June 17.—For 128 houses on the Boarded Barns Estate, Chelmsford. —For the town council. —Tenders to G. Melvin, town clerk, Municipal Offices, Chelmsford.

June 17.—For work at Tordale, Totnes, to convert it into a Home for Children. —For the guardians of Totnes Union. —Architect, W. F. Tolitt, 6, Bridge-down, Totnes. —Tenders to F. K. Windeatt, clerk, 19, High Street, Totnes.

June 17.—For extensive alterations and additions to the Wesleyan schoolroom, Beaufort. —For the trustees. —Architect, H. Waters, M.S.A., Beaufort. —Tenders to the secretary, F. Palmer, 5, Somerset Terrace, Beaufort.

June 18.—For cottage baths in Albert Avenue. —For the Hull Baths Committee. —City architect, J. H. Hirst, Guildhall, Hull. —Tenders to the chairman of the Baths Committee, Town Clerk's office, Hull.

June 18.—For the first portion of housing scheme for the erection of 46 houses, Chart, Sutton, etc., Kent. —For the Hollingbourn Rural District Council. —Architect, H. T. B. Barnard, 82, Victoria Street, S.W.1. —Tenders to F. Miskin, clerk, 33, Earl Street, Maidstone.

June 18.—For houses in Rodbourne Cheney, Upper Stratton, and Wroughton, Wilts, viz.:—Rodbourne Cheney, 36 houses; Upper Stratton, 26 houses; Wroughton, 20 houses. —R. J. Beswick, M.S.A., architect, 10, Victoria Road, Swindon. —Tenders to W. P. Kirby, clerk, 109, Victoria Road, Swindon.

June 19.—For 171 houses at Horden Colliery. —Tenders to the Horden Collieries, Ltd., Castle Eden, S.6.

June 19.—For 60 pairs of cottages to be erected at Lerwick. —For the town council. —D. and J. R. McMillan, 105, Crown Street, Aberdeen, architects.

June 21.—For about 100 houses on the Cattle Market site, Gainsborough, being the first instalment of a housing scheme of about 250 houses. —For the Gainsborough Urban District Council. —D. M. Robbs, clerk, Council Offices, Gainsborough.

June 21.—For 48 houses. —For the Wanstead Urban District Council. —Tenders to Council Offices, Wanstead, E.11.

June 21.—For the first instalment of their housing scheme. —For the Chirk Rural District Council. —Architects, Berrington, Son, and Watney, Prudential Chambers, Wolverhampton, and 4, Memorial Hall, Oswestry. —Tenders to C. H. Bull, clerk, Council Offices, Oswestry.

June 21.—For 40 houses. —For the Friern Barnet Urban District Council. —Architect, H. A. Welch, A.R.I.B.A., 7, New Square, Lincoln's Inn, W.C.2. —Tender to E. Goodship, clerk, Council Chambers, Friern Barnet, N.11.

June 21.—For 20 houses. —For the Fareham Urban District Council. —Architect, Norman Atkins, 62, West Street, Fareham. —Tenders to Council Offices, Quay Street, Fareham.

June 21.—For 30 houses of various types. —For the Runcorn Rural District Council. —Architects, Wright and Hamlyn, Sankey Street Chambers, Warrington. —Tenders to G. F. Ashton, clerk, 71, High Street, Runcorn.

June 21.—For erection of houses on the Fitzgerald estate, Lower Richmond Road, Mortlake. —For the Barnes Urban District Council. —Tenders to G. B. Tomes, surveyor, Council Offices, High Street, Mortlake, London, S.W.14.

June 21.—For 20 houses. —For the Waltham Holy Cross Urban District Council. —Tenders to F. C. E. Jessopp, clerk to the Council, High Bridge Street, Waltham Abbey.

June 22.—For 30 pairs and three blocks of houses, and for roads and sewers, etc. —For the Uxbridge Urban District Council. —W. L. Eves, F.R.I.B.A., F.S.I., 54, High Street, Uxbridge, architect. —Tenders to H. M. Blackwell, clerk, 121, High Street, Uxbridge.

June 25.—For one or more pairs of six houses at Bulwith, and 14 houses at North Cave. —For the Howden Rural District Council. —Council's architect, S. Piper, Market Place, Howden. —Tenders to H. Green, clerk, Howden.

June 28.—For 90 houses in the borough. —For the Sutton Coldfield Town Council. —Tenders to R. A. Reay-Nadin, town clerk, the Council House, Sutton Coldfield.

June 30.—For a police house and office at St. Mary-in-the-Marsh, near New Romney. —For the Standing Joint Committee. —County architect, F. W. Ruck, 26, Week Street, Maidstone. —Tenders to county architect.

July 1.—For 94 houses on the Grays Hall estate. —For the Grays Thurrock Urban District Council. —Tenders to Hatten and Asplin, clerks of the council, High Street, Grays.

The Empire Theatre and the Queen's Hotel, in Leicester Square, are to be pulled down, and in their place two large picture theatres are to be erected. The site has been bought by a Canadian company.

The new building of the University of London, given by Sir Herbert Bartlett, for the Department of Applied Statistics, was opened last Friday. It was in 1912 that Sir Herbert Bartlett offered to provide the building opened yesterday on a site on the north-west front of University College. The building was completed in 1914, and was utilised as a military hospital during the war.

As from the 7th inst. all communications for the clerk's and chief engineer's department should be addressed to the Water Board's new head offices, 173, Rosebery Avenue, E.C.1. The surveyor's department will remove to the new head offices on the 10th inst., the solicitor's department on the 11th, and the accountant's department on the 14th inst. The Board's new telegraphic address will be "Water Board, Isling, London," and the telephone number Central 4747 (nine lines).

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THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House.

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Strand, W.C.2

OUR ILLUSTRATIONS.

Royal Colonial Institute, Northumberland Avenue, London. Reconstruction 1920. Messrs. Alfred H. Hart and Percy L. Waterhouse, F.R.I.B.A., Architects.
Proposed War Memorial, Salisbury. Royal Academy, 1920. Mr. Cyril A. Farey, A.R.I.B.A., Architect.
Proposed Road Screen, St. Luke's Church, Uxbridge Road, Shepherd's Bush, W. Working drawing Mr. Maurice B. Adams, F.R.I.B.A., Architect.

Currente Calamo.

In the wake of risen wages in the building trades, of course, the subsidy to builders has been increased, as we predicted weeks ago it would have to be, and so the merry game of beggar-my-neighbour goes on! It has been decided that the grant shall be increased by £100 for houses begun on or after April 1, and by £50 for houses begun before that date. The new regulations contain a provision by which local authorities can obtain a grant under the subsidy scheme for houses built for sale to intending occupiers. Several other changes were announced by Dr. Addison at the meeting of the Parliamentary Housing Committee last week, who also has found out "that the operation of the law in the proportion of 'luxury building' is not wholly satisfactory." There is to be more legislation about the matter, and cases must be heard more expeditiously. If tinkering would only build houses and enable panel doctors to treat 5,000 patients at once what a Minister of Health he would have made!

The political correspondent of the "Daily Mail" writes: Sir Tudor Walters, the Paymaster-General, who was appointed to act with Dr. Addison as his chief assistant in carrying out housing schemes, has decided to relinquish those duties. It was said in the Lobby late on Monday night that he had resigned owing to differences of opinion with the Health Minister as to the wisdom of his housing policy. We hope the statement is not true, but Sir Tudor Williams does know something about housing and the manifold problems involved, and must have had a trying time with Dr. Addison.

The conversion of tall and unlettable houses in London and elsewhere into flats is the need of the day. These changes in interior structure are much hampered as to leases by the restrictive covenants they contain, and as to freeholds, by the stringent stipulations still common in conveyances. The aim of the first owner is always to keep up the residential and high-class character of his locality. These clauses run with the land, and are enforceable by the adjoining owners. But it has now been discovered that by means

of Section 27, tucked away in the Housing, Town Planning, etc., Act, 1919, where not even a lawyer would look for it, a county court judge has power, after hearing all parties, to vary, and so to get over, these restrictions. The question was considered in the recent case of "Johnston v. Macconchie and Others," in the High Court. Plaintiff was owner of a freehold at Porchester Gate, Bayswater, under a conveyance which provided that it should not be used "otherwise than as a private dwelling house." Wishing to convert the place into four flats, he applied to the Marylebone County Court, under the above Act. The judge there accepted defendant's argument that the Act only affected working-class people, for whom these flats were clearly not intended, and held he had no jurisdiction. On plaintiff's appeal to the High Court this ruling was reversed, the Court holding that the Act was not confined to working-class dwellings, and that this Section 27 was of general application. The appeal was allowed, and the case sent back to the County Court judge to deal with on its merits. There must be many owners, architects, and builders to whom this decision will prove interesting and important.

Trying the case of "The King v. the Ministry of Health," in the King's Bench Division on the 9th instant, the Lord Chief Justice said: I can't help thinking that, if the case had involved private money instead of public money, we should never have been troubled with a case which, the moment we cast an eye on it, is seen to have no substance whatever in it. His Lordship was commenting on the methods of the Ministry of Health and the Metropolitan Borough Council of Hammersmith to the Solicitor-General (Sir Ernest Pollock, K.C.), who appeared, with Mr. Branson, to show cause against a rule nisi for prohibition to prevent the Ministry of Health from holding an inquiry or confirming an Order made by the Metropolitan Borough of Hammersmith for the compulsory acquisition of certain land under the Housing and Town Planning Acts, 1890 to 1919. The Council made a compulsory order on Mrs. Taylor to acquire her private garden under the Town Planning Act. Although a private garden cannot be taken under the Act and the Order was irregular, it would have become valid unless disallowed by the Ministry

of Health on an appeal which has to be made within a month of the issue of the Order. But neither Mrs. Taylor nor her solicitor could obtain from the Ministry any reply to their letters written in February, and she had no alternative but to embark on costly legal proceedings. If the Land Union had not stepped in, Mrs. Taylor would have lost her garden illegally, unless she had been prepared to embark on expensive litigation against a great Government Department. It is a scandal that property owners should be placed in this position, and we are glad to know the Land Union, as in this case, will, as far as possible, support property owners financially when threatened in the same way as Mrs. Taylor.

The Ministry of Health has issued "for official use" a series of type plans and elevations in connection with State-aided housing schemes, which can be had for one shilling of the Government Stationery Office, through any bookseller, and the quantities pertaining to each type for threepence. Armed with these, anybody can start house-building, of course, and get the full-sheet working drawings, which can be obtained from the Ministry, or the various housing commissioners—price, if any, not stated. The drawings illustrate numerous variations in planning and external design, but generally cover only two types, one for cottages with living-room, scullery, three bedrooms, and necessary offices, and the other with a parlour in addition. Special attention is drawn to those houses designed with extra long frontages and shallow depths as especially suitable for hilly sites. With most of the designs two aspects—northerly and southerly, are indicated, with the consequent advisable variations in planning. That will be useful, otherwise the designs are of the usual commonplace type, Plate 31a being a welcome exception. As a whole, the publication evidences more practical acquaintance with its subject than most of the literature of the sort we have been deluged with by the Ministry of Health, which must have contributed materially to the present deplorable scarcity and dearth of paper.

Another well-deserved lock-out was announced last Friday by the old and well-known firm of Messrs. William Cole and

Sons, engineers, of Hammersmith, which has been established over a hundred years, and of which the weekly wage bill was about £3,000, and the number of men employed over 500. They allege that the workmen, by their guerilla tactics, have made it impossible to carry on the business successfully. The firm have £400,000 worth of orders in hand, but, as the men do not produce enough work, the firm cannot go on, except at a loss. They have offered the men "piecework" terms, by which, say the firm, they could earn three times their present wages. The firm want, of course, to increase the output. The men will not accept the piecework principle, said a member of the firm to a news agency. "We have to turn down orders every day simply because we cannot get the work out," he added. Although there is a great shortage of workers in our trade, the unions will not allow dilution. You would be surprised at the amount of time that is lost solely by the constant succession of deputations from one or other section of our employees making new demands. Every other day brings fresh demands for increases of pay. Even the men's union deplores these tactics, and has written to tell us so." The men, it appears, have since come to terms, but the firm will only take back a limited number of the 500 employees during reorganisation on condition that they abide by the rules of their unions.

A distinguished party of delegates attending the International Housing Congress at Westminster, including the Belgian Minister, M. Bertrand, Vice-President of the Belgian Parliament, and most of the Belgian representatives, made a special tour of inspection on Sunday week round various housing schemes which are being carried out on the Winget system of concrete blocks. Great interest was taken in the scheme at Wembley Hill, where Messrs. Callow and Wright are developing an estate of some 400 acres, as well as in the neighbouring estates of the Metropolitan Railway Company at Wembley Park and Neasden, all of which are being developed on the same system. Of the forty houses at present under construction at Wembley Hill, seven have been completed up to the present, and each of these has already been sold. Two types of houses are being constructed, each type, however, including the same number of rooms—parlour, living-room, kitchen, scullery, and three bedrooms, with a bath-room on the first floor. The walls are built of Winget blocks, with an aggregate of ashes (breeze) from the electricity works just by. The party-walls are built of solid 16 in. by 9 in. by 9 in. blocks, but having a core hole through them, and in making these blocks the breeze is used as received from the electricity works. In making the internal partition slabs, which are 2½ in. in thickness, the breeze is put through a screen, and only the fine material used. The external walls are built with a continuous cavity, the inner leaf being 4 in. in thickness and the outer leaf 3 in. in thickness, tied together with galvanised iron ties. The external walls are

rendered, and in some cases colour washed. Gas is provided for cooking, and electricity for lighting. On the Metropolitan Railway's estate at Neasden some forty houses under construction were seen in various stages; some just started, others practically finished. The accommodation is much the same as at Wembley, though the arrangement is somewhat different. The walls are built with a continuous cavity, but both the inner and outer leaf are 4½ in. The proportion and material in the blocks are similar to those at Wembley. The builders (Cyclopes Construction Co.), who are also making the concrete blocks, are getting good outputs from their machines, the figure averaging about 40 pulls per hour or 160 blocks, 16 ins. by 9 ins. by 4½ ins. per hour. In order to see how houses thus built have "weathered," and otherwise stood the test of time, the delegates subsequently visited a number of Winget houses in various parts of Kent, including estates at Wrotham and Otford, where houses of concrete blocks and slabs have been occupied for years. In some of these houses the blocks have been made from an aggregate of chalk and sand, with results which have proved in every way satisfactory.

MODERN BRICKMAKING.

Probably there is no matter of more vital interest, as far as material is concerned, to all engaged in building than the making of bricks, and certainly no man knows more about it than Mr. Alfred B. Searle, of the White Building, Sheffield, the well-known consulting expert on clays and clay products, and lecturer on brickmaking under the Cantor Bequest, to whom we have many times referred applicants for information, and among whom we have never found one who did not profit by it. It is, therefore, a pleasant duty to announce the very timely publication of a second edition of his well-known book on "Modern Brickmaking" by Messrs. Scott, Greenwood and Son, of 8, Broadway, Ludgate Hill, E.C.4, at 17s. 6d. net. The first edition of this book at once won for it a position as a classic, for there is no other single volume of its kind with such complete grasp of its subject. Without it, profitable knowledge of the modern methods of manufacture of recent growth is incomplete; and many brickmakers who have failed to profit by its contents are still using kilns and machinery which are either out of date or of which they have little knowledge. Even in the comparatively short time which has elapsed since the first edition was published, so much information has accumulated on the subject of clay-working that the book has in some measure become out of date, and considerable revision and rearrangement became necessary. Much new matter has been added, and the volume now consists of 512 pages royal 8vo., and includes 310 illustrations. It must therefore at once find its way to the shelves of every architect and builder, and a place in every technical library in the kingdom.

The more so because, unfortunately, at the moment bricks are such veritable articles of luxury that we should never be surprised at the prohibition of their use by Dr. Addison, whose solutions of the many problems that face present day builders are so akin to the short and sharp methods of the Macedonian

monarch who cut the knot he could not unravel. Meanwhile, the price of a brick bids fair to mount to that of gold, while, at any rate, among makers of the class hinted at above, it seems too probable that some of the bricks now being produced are fast approximating the worthlessness of the "gold bricks" foisted on tenderfoots by the artful speculators on human credulity in America and elsewhere. That the day of the genuine brick is past, as some interested in substitutes for it would have us believe, we doubt entirely. Concrete, with its admitted advantages under certain conditions, may largely take its place, and enthusiastic admirers of other substitutes may persuade us to build in Pisé, or mixtures of marble dust and sawdust, as we are told they are experimenting with at Vancouver; but the clayworker, with his vast resources of universally found raw material, may well bide the time when the products of his craft will be as widely used as ever, if he is wise enough to avail himself of the improvements in their methods of manufacture which have in so great a degree marked the progress of the last twenty years, and which will cheapen cost while improving quality.

For that there are bricks and bricks goes without saying, and just now more of the less desirable than could be wished. The general characteristics of a good brick are, or should be, familiar to all architects, civil engineers, and builders. It should be regular in shape, texture, and colour, equally and perfectly fired throughout, free from all cracks and flaws, with sharp arrises, and should give out a clear ringing sound when struck with a stone, another brick, or a piece of metal. Not, of course, that every such qualification is imperatively indispensable under all circumstances and conditions. For foundations and internal work any hard and well-fired brick will be good enough if the work is to be covered subsequently; indeed, for such purposes rougher and cheaper bricks have their positive advantages, affording as they do a better key for plaster than those with a smoother surface, and often being better weight-carriers than soft, well-finished bricks. The latter should never be used in foundations nor in external walls likely to be exposed to water or driving rain. Soft underfired bricks—"chuffs," as they are termed—are worthless, and fit for nothing but to be crushed for sand or "grog." On the other hand, a good non-absorbent brick, heavily pressed, and highly fired, may have too smooth a face, to which mortar will not readily adhere, especially in summer-time, even when the bricks are well wetted. It will be found that faulty bricks are more numerous amongst those which are hand-made, pack dried, and clamp fired than amongst those which are machine made, chamber dried, and kiln fired.

The quality of a brick must largely be judged with respect to the purpose for which it is to be used. The sizes of bricks should be uniform, as if they vary much the result is very uneven work. Sixteen years ago the Royal Institute of British Architects, in conjunction with the Institute of Civil Engineers and the Institute of Clayworkers, agreed to regard as a standard size bricks measuring between 8½ in. long, 4 5-16 and 4¾ broad, and 2½ and 2 11-16 thick. These sizes, however, are by no means generally adhered to. Many classes of bricks are made considerably larger, and some smaller. Absorption should never exceed 20 per cent., and the brick should not absorb

water readily, but should give it off freely. Uniformity of burning is best observed when the brick is broken across. The colour in section will often differ from that of the face, but even burning should have ensured uniform character and texture and slight vitrification. The broken brick should be free from cracks, flaws, and stones.

The strength of bricks is, of course, an important consideration. The creation of a standard crushing strength was discussed at much length during 1916 and 1917. Some preliminary figures were published, which Mr. Searle gives in Table III., p. 23. They were decidedly low, and might be raised at least to 50 per cent. above their suggested value. At the present time there is no recognised minimum strength for bricks. Mr. Searle gives in Table I., p. 22, the average results obtained from a large number of bricks examined by himself in the course of his practice, which are much nearer what a recognised strength should be as regards the classes of bricks tabulated:—

TABLE I.

	Tons per sq. ft.
Long grey stocks	85
Suffolk white and gaults	135
Essex red sand stocks	96
Leicester red wire-cut	275
Fletton bricks	255
Staffordshire blue bricks	483
South Yorkshire	272
Dutch clinkers	492
Rubbers and cutters	74

It is important to bear in mind that the strength of the bricks is always greater than that of the brickwork in which they are used—from 2.6 to 4.7 times greater, even when Portland cement is used for laying the bricks.

Durability depends to a great extent on the raw materials used and on the extent to which the firing has been carried. Impure or insufficiently ground, or mixed or underfired clay will never produce a durable brick. Excessive grinding is bad, as it tends to make the clay difficult to work; although the presence of lime in the clay renders fine grinding essential. Excessive kiln heat will cause the bricks to lose their shape, but, if not very excessive, will give a hard durable brick superior in everything but colour to a soft underfired one. It is undoubtedly one of the evils of the trade at the present time, as Mr. Searle says, that so many yards fire "for colour only," quite disregarding the other more important qualities of durability and strength. About all the foregoing, and many subsidiary points, he has much more to say in his opening chapter.

Chapter II. deals with the getting, cleaning, and transport of the clay. Chapters III., IV., V., VI., VII., and VIII. deal with the various processes and plants required. In Chapter IX. kilns and kiln construction and their selection, setting, and firing are fully treated. Chapters X. to XV. are devoted to vitrified bricks and other varieties and the drying of raw clay. Chapter XVI., the last, which dwells on the sources of difficulty and loss, is one of the most important in the volume. We know ourselves that the average brick-maker is too much given to asking advice of all and sundry, with no proper capacity of estimating its value. The result is that he often pays an excessive price for the simplest piece of plant, or buys a machine quite unsuited to his needs. He will do well to note Mr. Searle's wise words of caution. The five main sources of loss are quite serious enough, especially just now, without tempting fortune by adding to their number. They are: improper materials or site; unsuitable methods of manufacture; lack of capital; ignorant,

careless, or unskilled workmen; and defective accounting. We suppose the tempting stories of the big fortunes made by lucky makers who started with a few hundreds and piled up huge fortunes will, even at the present time, still lure the unwary and the reckless into bankruptcy, and that old works will be bought at big prices which ought never to have been built, and others planned for the production of goods for which no demand exists. Those who read Mr. Searle's book will, at any rate, be able to plead no excuses for foolhardy failure where failure is foredoomed. On the other hand, there are undoubtedly places growing rapidly on the outskirts of some of our smaller towns and near some of the larger ones where the brickmakers wisely informed may do well and benefit the community, and he will thank us for the real wisdom, which is the right use of knowledge, which, and which only, guarantees the riches greater far than East or West unfold, and is more precious by far than all the stores of gold foolishly flung to the winds by the ignorant and headstrong.

CONCRETE BUILDING ORNAMENTS.

BY R. SCHILLING.*

Fifteen years ago, when I started to make concrete attractive and pleasing to the eye, I accepted as definitely settled concrete's claim for strength and endurance, demonstrated by the engineers in their work of that time and by the examples of ancient concrete work still in existence, some of it dating back 2,000 years. My researches and experiments have been devoted entirely to giving concrete the attractive and artistic qualities which would make it interesting to the architect and decorator as a medium for embellishment and actual construction in their work.

Twenty years of practical experience among the natural stones used in monumental and building work enabled me to realise the conditions that must be met to give concrete a place alongside limestones, marbles, granites, and clay products in which the architects had expressed their thoughts almost exclusively. In the making of concrete, after once thoroughly understanding the qualities of cement as a binder or matrix, one can learn to adopt many mineral and metal resources as readily as we employ the better-known sand, gravel, and crushed stone for aggregates.

We have successfully used plaster, glue, wood, sand, cement, and steel moulds. A kind of mould extensively used in our plant is made of channel irons, in sizes from 2 ins. to 18 ins. wide, and in lengths from 4 to 8 feet. If set on level tables or benches, the main part of a mould that offers great flexibility in its use is provided; the channel irons are held together by different length rods at the ends; wood or plaster inserts, plain or moulded, determine the width, length, and design of the unit to be cast. The work is poured with finished face down, and can be solid or hollow, surfaced with special material on any one side or all four sides, if the volume of the stone makes it more economical to use a core of less valuable aggregates.

Some excellent work has been done modelling directly with cement mortar by artists who have attained their efficiency in this method abroad. The artist builds up his design with permanent skeleton framework, similar to modelling in clay. Around the skeleton he forms a rough outline of his design in wire cloth or expanded metal, and on this is placed a scratch coat of cement mortar with which, when set, he begins to model the final outline of his design. The artist is enabled, by using mixtures of quick-setting and slow-setting cement mortars, to regulate his medium. In this way he can give the work the same freedom and spirit as if he modelled in clay, producing any texture desired; colour effects can be ob-

tained at random by using coloured cement of various shades—for instance, a garland of flowers can be modelled in their natural colours.

THE TREATING OF SURFACES.

We use electric rubbing-wheels for smooth finish, acid for grain texture finish, and all the tools used in the natural stone trade for tooled finishes, according to the effect desired in the cast stone; and one, or all, treatments may be used on one piece. We have transportable rubbing and tooling machines to surface the extra heavy castings, and stationary machines for the smaller units. A cutting plant for natural stone is an ideal foundation to start an up-to-date cast-stone business, even to the use of its rubbing beds and gang saws.

I find that concrete of proper age can be treated just like any natural stone, using the same tools and machinery to dress its surfaces, or saw big cast blocks into slabs and strips. It is my strong conviction that the success of concrete stone for building purposes rests in a close affiliation of the stone caster and the stone cutter. Only in this way will we be able to give concrete proper texture and the necessary qualities of dimension stone, so essential to the architect and builder for durable and attractive construction.

IMPORTANCE OF A STONE CUTTER.

The addition to every concrete products plant of a skilled stone cutter would be a source of profit and also result in better work. The stone cutter is trained to have dimension stone true to size and shape. The average worker in cement or concrete does not appreciate this essential point, but it is all-important with the architect and general contractor. The services of a stone cutter will enable the concrete manufacturer to set his own work, which is very desirable for the best final results. We found that the brick or natural mason does not give composition stone the required care when setting it, for reasons of trade jealousy, but once give this fraternity to understand that concrete stone means extensive employment to stone cutters and setters, their antagonism will vanish as they realise their own benefit in the broader use of cast stone. Whenever the opportunity presents itself I strongly recommend closer affiliation of the composite and natural stone trades. The enormous increase in all building operations of whatever class, and the constant effort for betterment in the moderate-priced house give abundant field for both trades in higher class of work and at more satisfactory profits.

ACID TREATMENT.

To the manufacturer or worker of concrete products I further recommend the adoption of such methods as are employed successfully in other lines of manufacture in treating the surfaces of their products. In many cases, instead of applying the paint by brush, the article is immersed in the paint. This method can be adapted to acid washing of the concrete products to remove the surface film and expose the aggregates. Tanks of sufficient size are not a hard matter to construct in the concrete shop, and the immersion of concrete products in acid will not only prove a great saving of acid and labour, but produce a class of work that cannot be obtained with the scrubbing-brush. We have two rectangular tanks, 4 ft. by 4 ft. by 16 ft., built of cement slabs, grooved and bolted together, and six circular wood tanks, 7 ft. diameter, from 2 to 4 ft. deep. Concrete should be from two to three weeks old before treating in acid bath. Duration of bath depends on age of the stone, and if rough or fine texture is desired, the time being from one to ten hours. A weak solution from 1 to 10 up to 1 to 20 is required, and after the article is put in the tank the solution does the rest. This style of treatment preserves the edges and details of the design, and makes the surface uniform. Any of the hard spots not sufficiently affected by the acid bath can be treated separately after the article has been flushed with clean water. Care must be taken that the aggregates of the surface are nearly uniform in hardness, or the acid will eat the soft portion out before the harder

* Before Canadian Conference on Concrete House Construction.

particles have been cleaned of the cement coating.

COLOURED CONCRETE.

To produce colour effects we may use grey or white Portland cements, either by themselves, or mixed in certain proportions, adding to this suitable pigments, but in many cases the natural coloured aggregates, sand, silica, pebble grit, marble, and granite will give excellent and more uniform results. It requires great skill and care to properly mix cement and colour pigments without reducing the strength of the cement, and still obtain uniform colour effects.

As a very simple method to test the proper amalgamation of the pigment with the cement, take a handful of the dry mixture and press it under a sheet of stiff paper: this will produce an even surface of the material, and as long as this surface does not show absolute uniformity in colour the mixing is in complete. If small specks of colour show on the surface under this test, these same specks of unassimilated pigment will appear in the concrete. So far a very important factor that can be utilised for colouring concrete or cement has been given little or no attention; while very simple in its primary action, the successful application requires thorough understanding of the principle and medium employed.

COLOURING BY CAPILLARY ACTION.

The absorptive qualities of concrete during its stage of curing and seasoning offer opportunities for colouring concrete products by capillary action. By this method the colour is deposited into the pores of the surface, amalgamating with the concrete into a permanent unit. The possibilities of this treatment are unlimited, based on knowledge of coloring values and good judgment not to impair the strength requirements of concrete. Colouring solution can be made to penetrate the surface of concrete six inches or more if the object is immersed while in a very green state, but it is rarely necessary to penetrate more than 1-32 to $\frac{1}{8}$ of an inch; this thoroughly fills all pores, gives the desired colour effects and is less expensive. Every atom of colouring absorbed by the concrete reduces the strength of the solution, and as some of the colouring matter used is quite expensive, good judgment in allowing only the necessary absorption of colouring matter would be advisable from an economic standpoint. The sulphates of copper and iron are the most suitable to make solutions to colour concrete by the capillary method.

The concrete to be coloured can be treated after it is a week old. Concrete products used in construction and carrying loads should not be subjected to the colouring bath until the concrete has attained its required strength, as the filling of the pores in the concrete retards the action of curing by the usual methods. Colouring by absorption is effective on surfaces of concrete after it comes out of the mould or after being treated with tools. Surfaces that have been coloured by absorbing mineral or metallic colours become more weatherproof, and the action of the weather on the metallic colours is the same as on real metals, increasing the beauty of colouring by the usual oxidation noticed on bronze and copper. The surfaces of concrete treated by this method become so hard and dense that they will take a polish. I have treated such surfaces in the same manner as marble, granite, and metal under polishing or buffing machines.

WET CAST PRODUCTS.

Our products made by wet cast methods, such as flower-pots, vases, and boxes, will hold water after the second day of casting and become so hard that when struck with a hammer they ring like a metal bell; waterproofing compound helps, but is not essential to obtain this result. I consider that the thorough mixing of the proper amount of cement and water with graded aggregates is all-important. Extensive tests made during the past three years with commercial waterproof paints produced excellent results. Common concrete can be made very attractive by one or two coats, and, applied in stipple fashion, it will not impair the grain or texture, avoiding the undesirable effect of

painted stone. This method is especially to be recommended for dry or semi-dry tamped concrete work, as the porous surface readily absorbs the waterproof liquid and allows the pigment particles to fill the pores.

The colour effect obtained in this manner is the most economical. It is a uniform colour, but does not give the richness and depth of shading that results by the immersion treatment in a metallic colour bath. It has the advantage, however, of being applied where immersion is not practicable. I have obtained two-and three-colour effects by painting certain parts of an object before subjecting same to the colouring bath. The parts so coloured would not be affected by the colour in the bath.

The artistic possibilities of such treatment are only limited by the colour sense and taste of the craftsman. Using certain non-absorptive aggregates, their natural colour can be retained, while the absorptive parts, especially the cement mortar, will assume the desired colour. In this treatment precaution must be taken in the use of acids in washing before immersion in the colour bath, as the chemical action of the acids is liable to counteract the colour values of the bath. Acid should not be employed on concrete treated with colours.

CURING.

Most of our trim stone and ornamental work is wet cast. It is required to stay in the mould from 24 to 48 hours, and we use a 4 per cent. solution of calcium chloride for our mixing water. During cold weather our shops are steam heated and kept at a temperature of seventy degrees. We have no curing rooms, but for quick curing use high-pressure steam cylinders, 6 ft. in diameter and 70 ft. long.

While these tests did not exceed 80 pounds pressure, we have hardened concrete up to 150 pounds pressure, with the result that concrete two days old could be tooled under rapid speeding carborundum wheels, cutting flint aggregate without pulling out or fraying the edges. The mixtures used were from one to ten. Compression tests showed over 4,000 pounds in two days, and absorption less than five per cent. The higher the steam pressure the less time it takes to harden. With 150 pounds we reduced the time to four hours, besides the two to three hours it requires to bring the pressure up to 150 pounds.

No Portland cement concrete product should be subjected to high-pressure steam curing until it has had its initial set. The steam cure should start preferably the day following the casting.

Tamped concrete should be kept moist until it goes into the cylinder. As the initial expense of equipment and operating is considerably higher than curing-rooms, only units that lend themselves to completely filling the cylinder space can be hardened economically, like brick, tile, or blocks; at present prices it costs about \$20.00 to harden a volume equal to 900 cubic feet, or 20,000 brick. The cost of a cylinder of above size is \$6,000 installed. They should be used in pairs to allow the utilising of steam blown off from one cylinder to the other, after the curing is finished.

COMPETITIONS.

GLOUCESTER WAR MEMORIAL COMPETITION.

—Members of the Society of Architects are requested not to take any part in the above-named competition without first ascertaining from the Society that the conditions have been approved by the Council.

Mr. C. F. W. Denning, F.R.I.B.A., has been placed first in a competition for the proposed war memorial to be erected at Guildford by the assessor, Sir Edwin L. Lutyens, R.A.

Not many weeks since we announced the appointment as a representative of the British Reinforced Concrete Engineering Company, Limited, of Mr. Frank Fowler, and now regret to record his death, at the early age of forty-two, on Tuesday, June 8. He served in France during the war, in command of the 337th Road Construction Company, and previously was deputy-surveyor to the Staines Rural District Council. His brother, Mr. Harry Fowler, is the London manager of Tarmac, Limited.

Our Illustrations.

ROYAL COLONIAL INSTITUTE, NORTHUMBERLAND AVENUE.

This drawing shows a proposed reconstruction designed by Messrs. Hart and Waterhouse, of 1, Verulam Buildings, Gray's Inn, W.C., for the new extended front of the Royal Colonial Institute in Northumberland Avenue, embodying the existing building. Very careful consideration has been given to this point, and great economy has thereby been secured. This applies not only to the exterior, but also to the building itself, where very little is proposed to be taken down. The arched entrance is entirely new, and with its well-defined shadows should prove an effective centre for the building, emphasised as it is by the work over.

PROPOSED WAR MEMORIAL, SALISBURY.

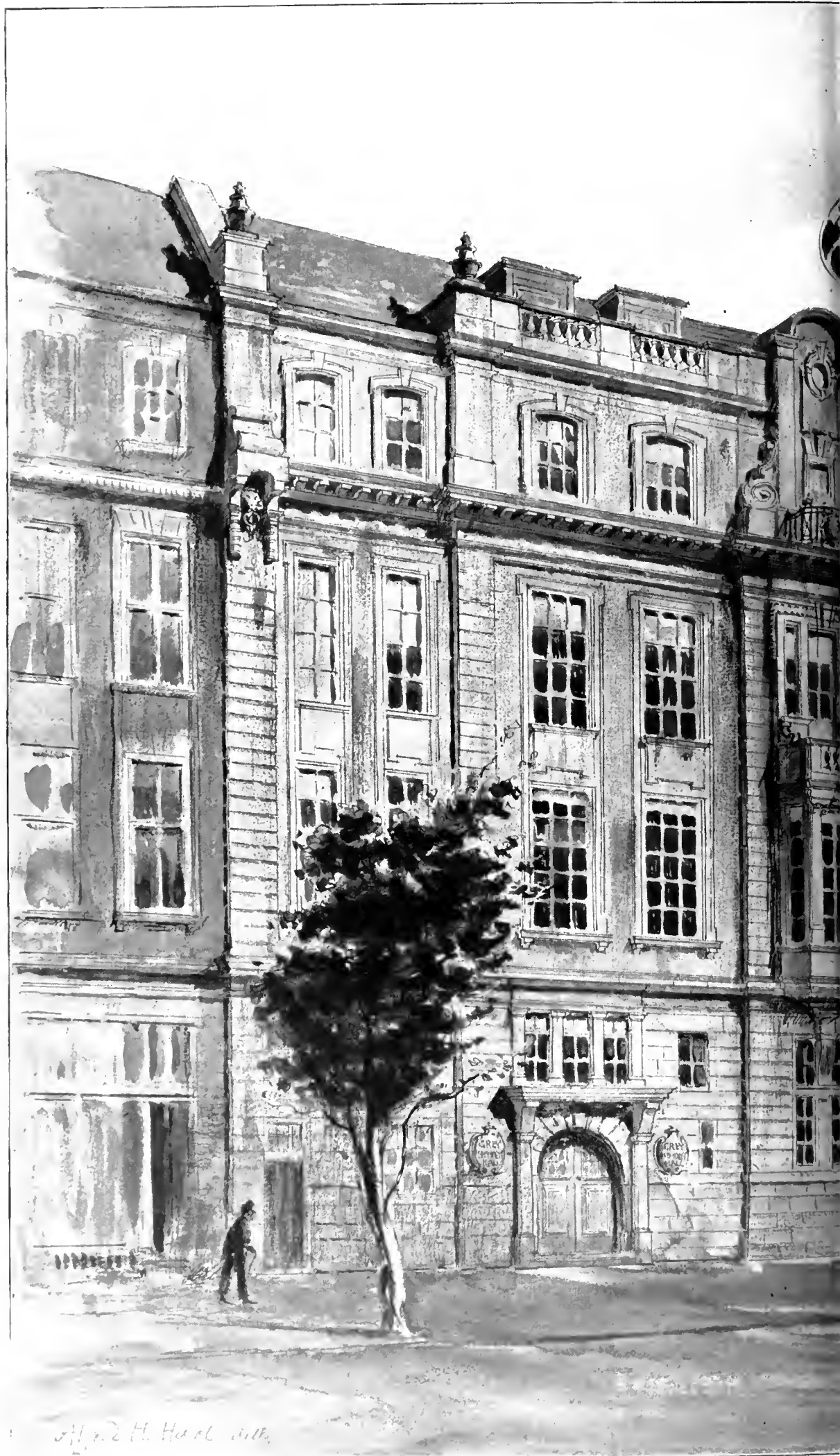
The memorial takes the form of a paved terrace alongside the river between Fisherton and Crane Street Bridges. At a point equidistant between these two bridges stands the cenotaph, which is octagonal in form, surmounted by the figure of Peace in bronze, and with four bronze panels, one on each of the main faces. On these panels would be inscribed the names of the fallen. Projecting at the base of these panels are stone tables, on which could be placed wreaths and floral offerings. Mr. Cyril A. Farey, A.R.I.B.A., of Salisbury, is the architect. The drawing given to-day is at the Royal Academy exhibition.

ROOD SCREEN, ST. LUKE'S CHURCH, SHEPHERD'S BUSH, W.

This well-known building in the Uxbridge Road, in the parish of Hammelsmith, is a red brick modern church in a Pointed style, imposing a simple arcaded treatment for the proposed oak screen to the chancel. The position of the existing choir stalls, also the eagle lectern being set on the steps, prescribed a somewhat unusual arrangement of the design and determined the particular spacing of the bays accordingly. The priests' seats are placed ambo fashion flush with the western face of the chancel responds, and over these stalls a pair of baldachins, serving as canopies, had to be provided. These testers project east and west, as shown by the plan; emblazoned carved shields along their cornice and the royal arms below the rood add to the interest of the richer parts of the structure. The proximity of the singers' seats necessitated folding dual gates so contrived as to open back flat on to the back of the screen on the north side to permit of passage space for the curate's access to his stall. Gates hung folding in the ordinary way could not be used. The accompanying illustration was reproduced from the half-inch scale working drawing with which full sizes were supplied to the builders. Messrs. R. Bridgman and Sons, of Lichfield, submitted the lowest tender out of six firms. Mr. Maurice B. Adams, F.R.I.B.A., is the architect of the work. A temporary full-size model of the screen was fixed for approval on the site, but the job has not been started on account of funds.

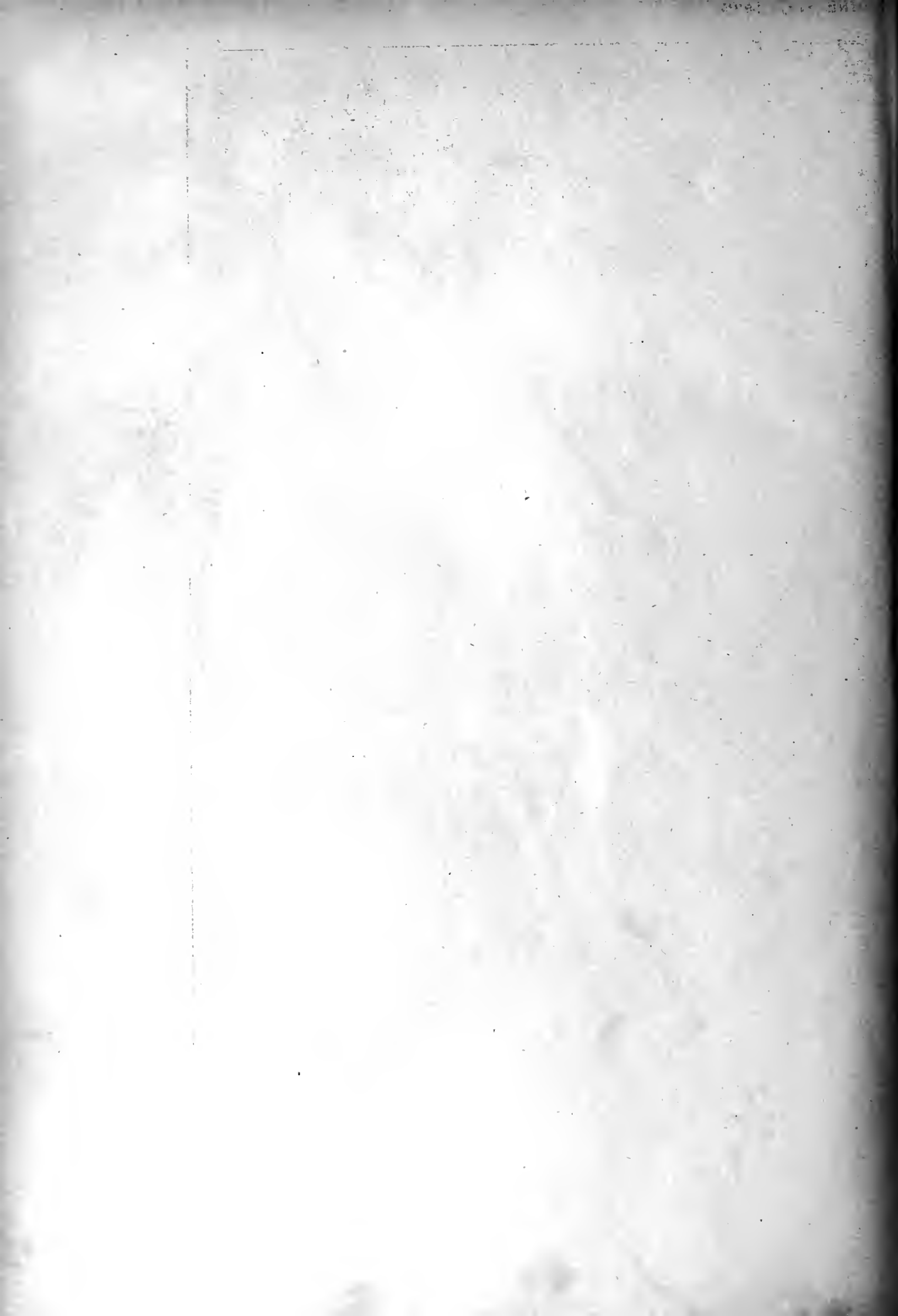
Sir John J. Burnet, J.L.D., the assessor in the competition arranged by Messrs. Marsh, Jones, and Cribb, Ltd., for plans for a seven-storied establishment in Boar Lane, Leeds, has awarded the premiums to: (1) Messrs. Cackett and Burns Dick, Newcastle-on-Tyne; (2) Messrs. R. Frank Atkinson and Cyril A. Farey, 199, Piccadilly, London, W.; (3) Messrs. Bullock and Jeeves, 141, New Bond Street, London, W.; (4) Messrs. Mellor and Farquhar, 62, Oxford Street, W.; (5) Messrs. H. Clifford, A. Lunan, Glasgow.

465-468

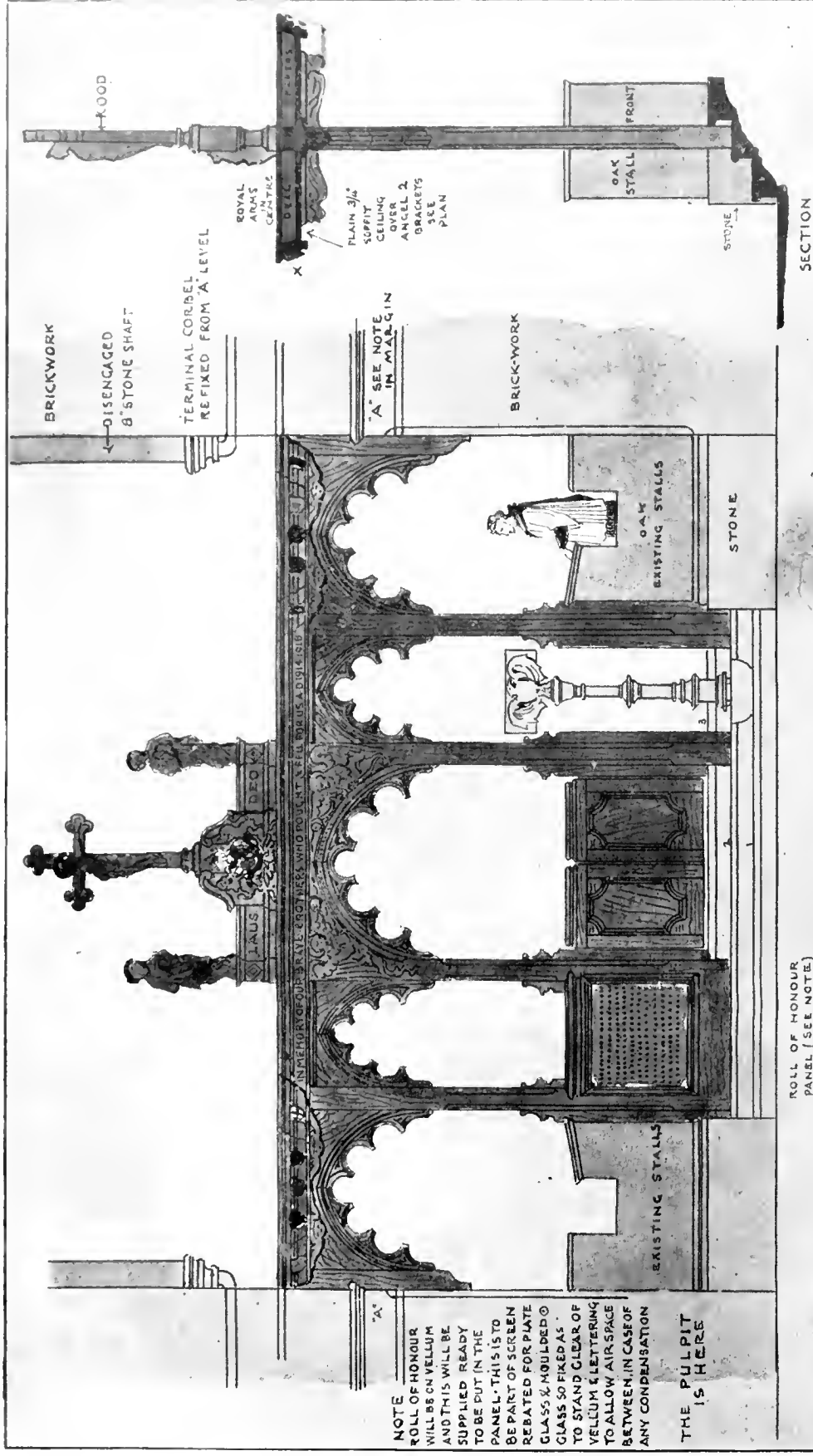


ROYAL COLONIAL
INSTITUTE
RECONSTRUCTION.

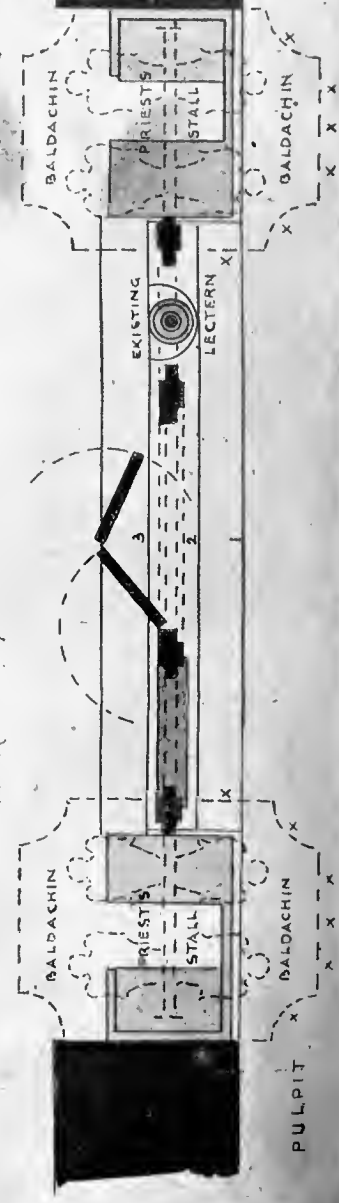




469-472.



PROPOSED SCREEN
 ST LUKE'S CHURCH
 SHEPHERD'S BUSH W.
 MAURICE B ADAMS ERIBA
 ARCHITECT 1919

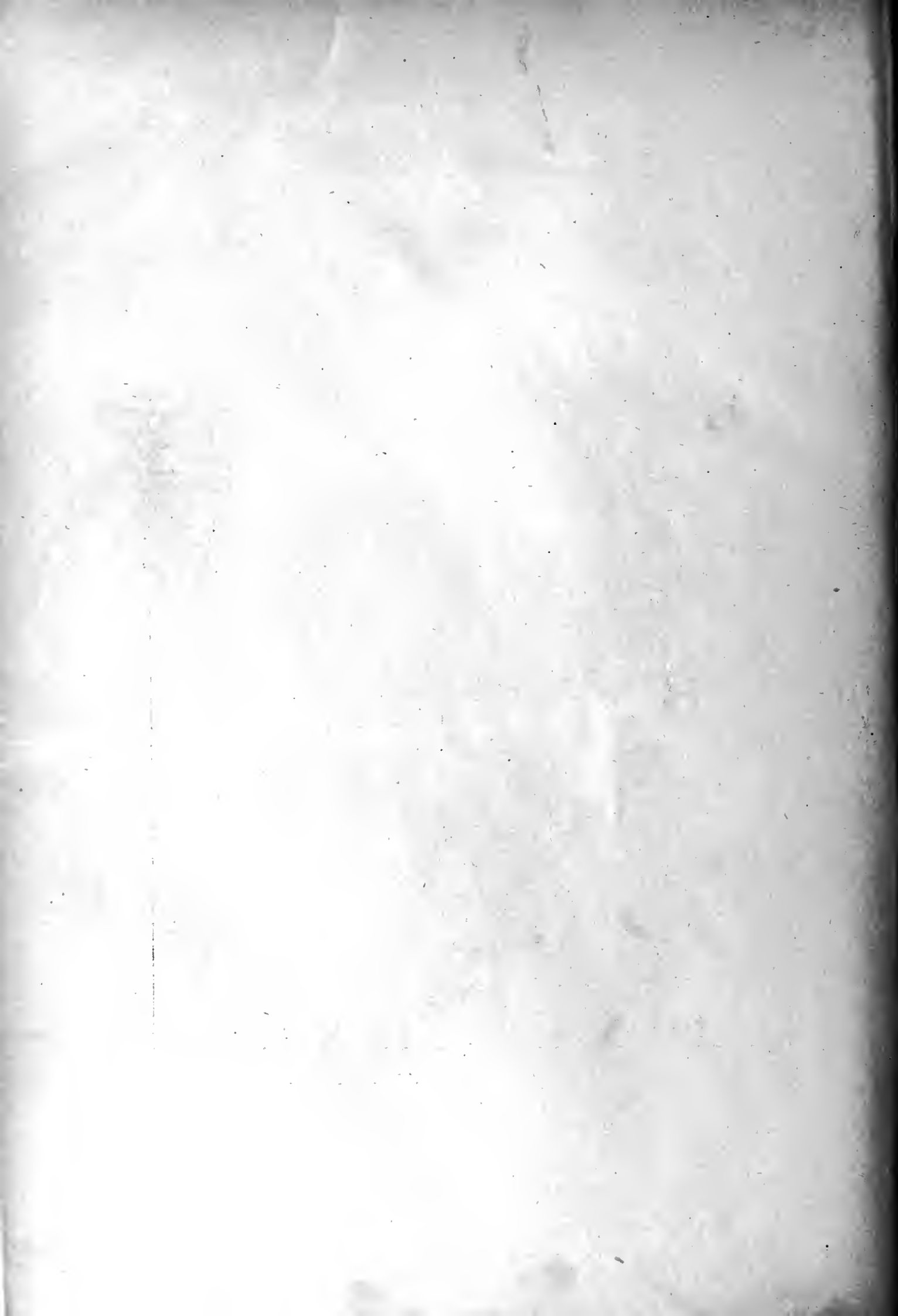


NOTE
 ROLL OF HONOUR
 WILL BE ON VELLUM
 AND THIS WILL BE
 SUPPLIED READY
 TO BE PUT IN THE
 PANEL. THIS IS TO
 BE PART OF SCREEN
 REBATED FOR PLATE
 GLASS & MOULDED
 GLASS SO FIXED AS
 TO STAND CLEAR OF
 VELLUM & LETTERING
 TO ALLOW AIR SPACE
 BETWEEN IN CASE OF
 ANY CONDENSATION
 THE PULPIT
 IS HERE



PROPOSED WAR MEMORIAL, SALISBURY

Mr. CYRIL A. FAREY, A.R.I.B.A., Architect.



DETECTING LEAKS IN UNDERGROUND PIPES.

Methods for the detection of leaks in underground water-pipes are numerous, but it is seldom that one can find a description of as many of them contained in a single paper as there were in the one presented by H. E. Babbitt, assistant professor, municipal and sanitary engineering, University of Illinois, before the recent annual meeting of the Illinois section of the American Waterworks Assoc. at Urbana, Ill. The following notes from *Engineering and Contracting* review most of the various methods described in this paper.

The simplest method for locating a leak is by observation, but it is not always true that the leak is directly below the point of observation. A sounding-rod is useful in many cases. A $\frac{1}{2}$ -in. rod about 5 ft. long can be driven down to the pipe in most soils. If the rod on withdrawal is moist, the indications are that the leak is farther up grade, if not, the leak has been passed and lies in the opposite direction. By driving the rod a few times it is often possible to isolate the leak at once. An aquaphone used in connection with the sounding-rod locates the leak by finding the place on the pipe where the loudest noise is produced. The aquaphone is an instrument that transmits the sound-waves of the water issuing from the leak through a metallic diaphragm to the ear. Other similar instruments make use of electric currents for amplifying the sound-waves. In all of these methods, however, direct contact with the pipe is necessary, generally through a rod driven in the ground, or other metallic connections to the mains.

SOUND DETECTORS.

Another form of leak-locator is a sound-producing instrument that does not require direct contact with the pipe. A very delicate sound-detector is set up on a 4-legged brass table which rests on the surface of the ground, and is protected from air currents by placing a box over it. The vibrations set up in the detector are converted to electric waves, which are transmitted through an amplifier to a very sensitive telephone-receiver. The instrument is so sensitive that it will detect the sound of a leak through the pavement and the ground at the ordinary depths to which waterpipes are buried.

The phenomenon of water-hammer is useful in locating a leak in a waterpipe. It is well known that if a valve in a pipe-line is closed quickly a pressure is set up in the pipe. This pressure is called water-hammer. It differs from the effect caused by a blow in that the pressure is maintained for some time. A wave of high pressure travels from the valve up the pipe to a point of relief, and a wave of low pressure then returns to the starting-point of the valve. The pressure at the valve fluctuates above and below normal until the disturbance has become stilled by the friction of its passage through the pipe, and the pressure returns to normal. Intermediate discharges between the valve and the point of relief will cause fluctuations in the pressure at the valve after the water-hammer has been created.

The speed at which the wave travels is affected by the diameter of the pipe, its material, and other factors, and varies between 3,600 and 4,200 ft. per second. In the application of this phenomenon to the location of a leak, the approximate location of the leak should be determined and the line of pipe on which the leak is located should be isolated by the closing of valves so that it is connected to only one large service main, preferably much larger than the pipe in question.

EMPLOYING WATER.

It may be necessary to shut off service connections or to apply the method at night when the service pipes are not drawing water. A quick shutting off valve is attached to a hydrant so located that the leak is between it and the water main. The distance from the hydrant to the connecting main along the pipe line should be measured accurately. A delicate recording pressure gauge is attached to another nozzle on the hydrant. The dial of this gauge is evolved by clock work. Time is recorded by the vibrations of a tuning fork.

After the instruments are connected, the valve is opened and water allowed to flow from the hydrant. The valve is then closed suddenly. On the closing of the valve, the pressure line on the diagram will jump up. The pressure will remain at this height until a slightly relieving wave has returned from the point of the leak, when it will drop a little. The pressure will then remain constant until a low pressure wave has returned from the point of relief. The exact location of the leak is then determined by proportional distances from the diagram.

CHEMICAL METHOD.

A method requiring the use of chemicals was suggested by T. J. Hoxie in the *Journal of the New England Waterworks Association*, Vol. 27, page 307. The leak is located tentatively within a certain section of pipe, which is then isolated as in the preceding method. It is essential that all service connections be closed. A corporation cock is tapped into the main somewhere above the leak. To this is connected a 6 or 8-in. length of 2 or 3-in. pipe and a valve. Two or three pounds of caustic soda are inserted in the tube, the large valve closed, and the time of opening of the corporation cock noted. Samples are collected at various points along the line, and tested for alkalinity with phenolphthalein. As soon as the alkalinity is found at any one point it indicates that there is a leak beyond that point, because the flow created by the leak has carried the chemical down. Finally, a point will be reached where the alkalinity does not appear. The indication is that the leak is somewhere between this point and the point at which it was last found. Water is withdrawn at the point at which the alkalinity has not appeared, and the quantity withdrawn before the alkalinity does appear is carefully measured. This quantity, divided by the volume per unit length of the pipe, will give the distance to the leak. Any number of leaks can be determined in this fashion.

An ingenious method based on volumetric displacement was used for the location of a leak in a pipe line in Chicago. A piston was made which fitted the inside of the pipe. A Y-branch was inserted in the pipe line, and the piston was put in the pipe through this branch. A cable attached to the piston was passed through a packed joint in the plug closing the Y-branch. The water was then gently turned on in the pipe sufficiently to keep the piston moving. When it had reached the leak it stopped, and the length of the cable measured the distance to the leak.

A simple method for the location of a leak in a submerged pipe is to dump a quantity of bluing in the line. The appearance of the bluing in the river or harbour will locate the position of the leak. Other equally difficult methods may be as effective as the more scientific methods just described.

If the location of the pipe line itself is unknown there is an instrument available known as the wireless pipe locator, by which the exact location of the pipe can be determined. An electric circuit is made by connecting two points on the pipe line by an electric wire. A battery and vibrator are put in this circuit, the vibrator serving to interrupt the current rapidly. An induction coil and a detecting coil connected to a telephone receiver are carried in the hand. When the induction coil held in a horizontal position is brought into the vibration electric field set up by the electric circuit through the pipe and wire a singing noise is heard in the telephone receiver. The volume of sound increases until directly over the pipe, when it ceases altogether. If the coil is then turned in a vertical position the loudest sound is heard.

Mr. E. George Mawbey, city surveyor of Leicester, has had his salary increased by £300 on his present remuneration, and £450 upon his pre-war salary, making the total £1,700.

Mr. W. E. Willink, of Cunard Building, Liverpool, has taken into partnership Mr. Harold A. Dod, who has been associated with his late partner, Mr. Thicknesse, and himself in their office, with the exception of the war interval, since the year 1913. The title of the firm will remain as before—Willink and Thicknesse.

THE PROSPECTIVE COMPETITOR METHOD OF VALUATION OF PROPERTY.*

By M. L. BYERS, M.Am.Soc.C.E.

(Concluded from page 458.)

14.—WHEN DOES "CONSTRUCTION" END AND "OPERATION" BEGIN?

In the determination of the competitor's investment to date and the commodity price necessary to the securing of a fair return thereon, a clear understanding of the physical and accounting procedures involved is necessary.

The construction and development of a railroad property to the point where it is a paying going concern involves the following steps: First, the inception of the project and such preliminary promotion and financing as will permit of general investigation and incorporation of the project; second, the securing of sufficient capital to enable the preliminary and location surveys to be made and construction to be commenced. In most cases the purchase of right of way must slightly precede, locally, the commencement of construction. With the continuance of construction, additional capital must be secured. Finally, the point is reached where trains hauling passengers and freight are run, thus enabling capital to be secured from the sale of transportation as well as from the issuance of stocks and bonds.

With the beginning of construction, the processes of solidification, seasoning, and deterioration commence, and these processes increase in rapidity of action with the commencement of train service, thus necessitating expenditures for maintenance of the property already created; embankments settle and are partly destroyed through the action of the elements; grasses, etc., begin to cover the exposed surfaces; decay and wear begin to produce the necessity for later replacement. Meanwhile, construction continues; expenditures for operation and maintenance increase, and the density of train service and of traffic increases.

A time finally comes when it is arbitrarily stated that construction has been completed and that operation of the property has commenced. The failure to recognise that this dividing line is an absolutely arbitrary one, adopted merely for the purpose of facilitating organisation matters, including the application of certain accounting rules, and having no relation whatever either to the cost or to the value of the property, leads to confusion in connection with valuation. The continuance of construction which, on ordinary railroads, never actually comes to a state of completion, is now called "additions and betterments"; in some cases it is called "maintenance." In ordinary accounting rules, there is considered to be a great distinction between construction, additions and betterments, operation and maintenance, and "depreciation." For valuation purposes much confusion is avoided if all these terms are entirely disregarded and if, in their stead, the receipts and expenditures necessary to the full development of the property are directly considered without first subjecting them to such misleading classification. In this way the arbitrarily established dividing line between receipts, depending on their sources, and between costs, depending on the instruments used in producing the same, is made unnecessary.

15.—AS OF WHAT DATE SHOULD THE VALUATION BE MADE, AND WHAT ARE "NORMAL PRICES" AS OF THE DATE OF VALUATION?

For practical use, the fair value of a property which must be used is that as of the date or period of use. Thus, for use in condemnation, it must be the fair value of the property as of the date of condemnation.

For use in the regulation of rates, it is necessary to bear in mind that it is undesirable to make frequent modification of

* This paper was not presented for discussion at any meeting of the American Society of Engineers, but written communications on the subject are invited for subsequent publication in *Proceedings*, and with the paper in *Transactions*. We reproduce the main portion, because, although conditions here may differ in details, it cannot but interest surveyors and valuers here at the present time to study the conclusions arrived at by a leading American authority.

rates, but that, on the contrary, they should be determined so as to be fair, on the average, over a considerable period of time. This necessitates the drawing of conclusions as to the probable average conditions as to prices, etc., which will exist during such future period. The unit prices most satisfactory to be used for valuation for such purpose are those which, it is considered, will probably be a fair average of the prices over such future period. The only method of estimating probable future conditions is through the study of the past conditions; therefore, the ascertainment of average unit prices year by year over a considerable period of the past is necessary. In determining the average unit price for a given period of the past, actual sales furnish the basis. Inasmuch as these sales vary greatly in quantity, it is necessary that the average used be a weighted average and not merely an arithmetical average.

Normal price as of a given date may be defined as being the market price as of that date, assuming business conditions to be normal and not under the influence of undue optimism or pessimism as to the future.

16.—HOW CAN VALUATION BE KEPT UP TO DATE FOR RATE REGULATION PURPOSES?

It must be borne in mind that valuation is not and cannot be made an exact science; neither is there any practical necessity that it should be so. The true measure of the value of a property, as has already been stated several times, is its profitability, present and prospective, actual and anticipated. Evidently, prospective and anticipated profitability in themselves can be estimated only approximately, and yet, in nearly all commercial transactions, it is the future prospect rather than the present fact which determines the investor's conclusions as to present value.

Having determined, with such reasonable accuracy as may be, the present value of a piece of property (future prospects being one of the vital considerations), the most important factors which, in the future, will bring about a modification of such estimated value are the appreciation and depreciation in the value of land owned or used, like fluctuation in the prices of labour and material such as have already entered in the construction of the property, the invention of improved methods of construction; additions and betterments necessary to the growth of the business will add quantities to those existing as of the date of valuation; and property abandoned on account of obsolescence, etc., will reduce the valuation quantities. All these changes over a reasonable period of years, together with their effect on the future profitability of the property, are considered in arriving at the original valuation; further, it is greatly to the interest of the public to avoid frequent fluctuations in commodity prices (freight and passenger rates, etc.). Presumably, therefore, the fair rates established at the time of the valuation (which rates are based, not on the conditions as of the instant of valuation only, but on prospective conditions as well) will be fair for a considerable period of time thereafter. Fluctuations due to additions and betterments and to abandoned property can be taken care of with considerable accuracy by the application of ordinary accounting methods. Variation in the fair value due to fluctuation in unit prices of labour and material can probably only be dealt with either by a new valuation from time to time, or by the keeping of a suitable index number such as that maintained by Bradstreet's, the London "Economist," and others, but adopting a base arranged to represent the more important kinds of labour and material used in railway construction in their proper proportions, and using the fluctuations of this index for the purpose, from time to time, of applying percentage corrections to the original fair value. Fluctuations in land value could probably only be allowed for through the occasional making of re-appraisals of selected properties and through the application of a percentage correction to all the land values.

A percentage correction applied in such manner to the original valuation, although crude, would still probably greatly extend

the period of serviceability of the original valuation.

17.—COMPARISON OF THE COST-OF-REPRODUCTION METHOD WITH THE PROSPECTIVE COMPETITOR METHOD OF VALUATION.

1.—Land Values.—The competitor method assumes that, in the construction of its property, the competitor will be obliged to purchase land having the same present ordinary values and being subdivided in the same manner as similar lands adjoining the property under valuation as of the date of valuation. This avoids the absurdity, pointed out by Justice Hughes in the Minnesota Rate Case, of assuming that the railroad producing much of the value of the land is non-existent, but that the land retains its full value. Presumably, it might be claimed that the competitor, in entering a town, would select a location for its line and for its terminals which would cost less per acre than the lands adjoining the property under valuation. The answer is that it is fair to presume that the original railroad located its line in such manner as to make the cost of land plus the cost of grading and other improvements a minimum, considering the value of the location with reference to convenience of access for traffic. The adoption of a different location would mean different grading quantities and also the estimating in terms of earning power of the difference of attractiveness of the two locations. This would involve such excessive complications as to make the problem practically unsolvable. The fair presumption is that the original line secured the best available location, cost considered, and that any other location would cost more or would be worth at least proportionally less. In practical operation and in results obtained, the two methods are identical, as to land. The competitor method is logical whereas the other is not.

2.—Present or Past Conditions.—By the competitor method, all questions as to whether present or past conditions apply in making the estimate are solved without difficulty. The reproduction theory affords no positive clue as to whether present or past conditions should be considered in individual cases, and there is much present controversy over this point.

3.—Construction Period.—The reproduction theory involves the reproduction of the property, as it is to-day, in one operation; thus, a four-track railroad would be reproduced as such absolutely regardless of the fact that no railroad, either the original occupant of the territory or a later competitor, ever is built in such a manner. The competitor theory calls for a gradual construction and development of the competitor at a rate dependent on rate of growth of traffic in the community and is, therefore, consistent with the invariable facts of such industrial development.

4.—Going Concern Value, and Cost of Development of Earning Power.—The reproduction theory admittedly carries the process of estimating value only to the point where the property has prepared to become a going concern but has not taken that step. This leaves an element of value called by the Courts "going concern value" to be ascertained by some succeeding process. No process departing greatly from clairvoyance has yet been devised. The competitor theory provides for the estimating of the cost of the development of the traffic on a basis readily applied in practice and governed by the application of simple principles to easily ascertainable facts.

SUMMARY.

The Prospective Competitor Method of valuation of property subject to competition is dependent for its successful use on the proper selection of two items, for neither of which the method provides a determination which, in its last analysis, does not depend on the judgment of the user. These two items are: (1) the earning power which the competitor is assumed to have at the commencement of normal operation (say, the second year of operation in the case of a railroad); and (2) the rate of increase of earning power.

Inasmuch as the public does not underwrite the cost of abnormal errors of judg-

ment, among which may be classed the inception of an enterprise where there is not yet a normal public demand for the product, and inasmuch as, consequently, the owner of the property is entitled to reward where exceptionally good judgment has been used, it is evident that these two items must be selected so that they represent normal or average conditions rather than those actually confronting the property under valuation.

With reference to the rate of increase of earning power, the problem is comparatively simple, inasmuch as the average rate of growth of earning power of a given industry in a competitive district is readily ascertainable.

There are several points of view from which the consideration of the earning power to be assumed for the first normal year of operation can be considered. First, we may consider past history. What was the earning power of the first year of actual enterprises of the character under consideration? The objection to using these data is that the earning power awaiting one enterprise might be satisfactory, and yet might be entirely unsatisfactory for a different enterprise requiring a greater initial outlay.

A second point of view is that which considers the normal character of capitalisation of enterprises. The early expenditures for construction, etc., must be borne by the owners. After construction has proceeded so far that there is a property having a considerable tangible value, then it is possible for the owner to seek financial assistance through mortgaging his property; especially is this true if a definite earning power has been developed. If, therefore, the initial earning power of the competitor is sufficient to pay operating expenses plus interest on one-half the cost to that date, a definite basis will be established for securing additional capital through a bond issue equal to one-half the cost to such date.

To illustrate: The original cost to the end of the second year of operation of the Virginian Railway's "competitor" was about \$56,000,000. Interest at 6 per cent. on one-half this sum is \$1,680,000. Operating expenses for the second year are estimated to be \$2,800,000, the sum of the two items being \$4,480,000 as against the \$3,671,224 gross earnings actually earned by the Virginian Railway during its second year of operation (at rates apparently much too low).

The history of five other properties shows a second-year gross of from \$3,300 to \$9,600 per mile of road, that of the Virginian Railway being about \$4,600 per mile.

Sir Edwin Lutyens, the architect of the Whitehall Cenotaph, has visited Hove and advised the corporation to choose the centre of Grand Avenue as the site for the war memorial.

An equestrian statue of the late Field-Marshal Viscount Wolsley, designed by Sir William Goscombe John, R.A., has been erected on the Horse Guards Parade, and will be unveiled by the Duke of Connaught on Friday next, at 11.30 a.m.

In connection with the establishment of a Jewish National Home in Palestine, a company has been founded under the name of Haboneh (Anglo-Palestine Building Company), Limited, with capital of £200,000 divided into 8,000 shares of £25 each, with the object of providing Palestine with model houses.

In the competition for the war memorial at the Cottage Hospital, Park Road, Hornsey, Mr. John Austin Dempster, High Street House, Lancaster; Mr. Robert Love, 60, Belsize Road, N.W.6; and Mr. William C. Porto, 183, Springfield Road, Belfast, have been awarded respectively the premiums of thirty guineas, twenty guineas, and ten guineas.

The Alhambra Picture House, Ltd., of Huddersfield, last Friday obtained, in the King's Bench Division, a rule requiring the Tribunal under the Act dealing with "luxury" building to rehear their appeal against the decision of the Town Council prohibiting the erection of a picture house. They contended that the Tribunal had confirmed the Council's decision with undue haste and without calling for other than documentary evidence.

Building Intelligence.

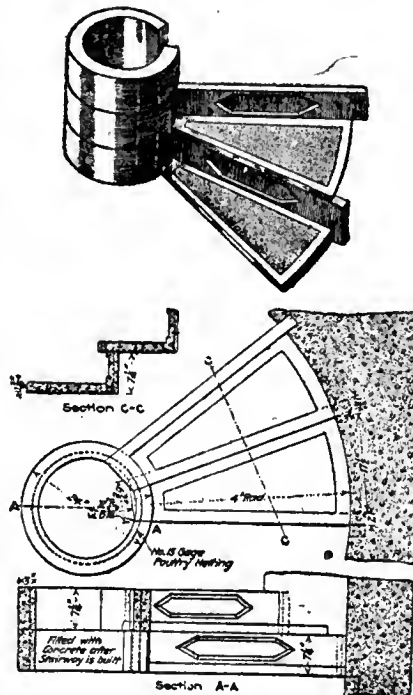
COVENTRY.—The Duke of York opened the new Council Room at Coventry on Friday last, using a silver key presented by the architect, Mr. H. W. Simister. The foundation-stone of the new municipal buildings was laid in 1913, and although the building had been so far completed as to enable the officials to move in, the council chamber has only been finished within the past fortnight. The council house has a frontage to Earl Street of 260 ft., is faced with Runcorn stone, and has roofs of Cotswold stone. A feature of the elevation is the heraldic carvings, which include the blazons of many historical characters connected with the municipal life of Coventry from the time of Edward the Confessor to the sixteenth century. The stained glass in the staircase windows includes depictions of the coats of arms of the ancient trade guilds and companies which played a striking part in the city's mediaeval life. The council chamber has a lofty vaulted ceiling, stained glass windows and elaborate carvings. It is furnished in English oak, carved in a Somerset village by a Guild of Carvers, under the direction of Mr. Henry Wilson, president of the Arts and Crafts Exhibition Society. The municipal buildings were erected after a competition in which the premiums were awarded to (1) Messrs. Garrat, Simister, Buckland and Farmer, of Birmingham, subsequently appointed architects of the building; (2) Messrs. Couch and Barnard, 82, Victoria Street, S.W.; and (3) Mr. H. J. Rowse, of Great Crosby, Liverpool. We gave illustrations of all three designs in our issue of April 23, 1911, and reviewed the competition on page 585 of the same number, when we said the extremely awkward site had been dealt well with by the successful competitors' compact and economical planning.

ST. IVES.—Yesterday week the Bishop of Ely re-opened the restored Parish Church of All Saints', St. Ives, which for over two years has been undergoing repairs after the aeroplane disaster on March 23, 1918, which toppled the spire through the roof of the church. On that evening a British aeroplane rising from an adjacent meadow crashed into the spire, which was rebuilt as recently as forty-five years ago—with the result, not only that the young pilot was killed instantly, but half the spire was cut off and fell upon the western roofs of the church, the timbers being crushed and splintered. About forty seats in the north aisle were destroyed, and damage was also done to the lead sills of the clerestory windows, etc. Although the church was insured for £14,000 against war risks, the Government Insurance Department would only recognise liability up to about £3,200—the estimated cost of repairing the damage directly attributable to the accident. But the whole roof was in a bad condition prior to the occurrence, and the church authorities had to decide whether they would adopt a patching scheme or effect a restoration which must become necessary in any event very shortly. It was decided to adopt the big scheme, and three entirely new roofs have been provided for the nave. The spire still remains to be re-built, and therefore a very considerable amount of money has still to be raised. In addition to the roofs, the oak seating has been repaired where damaged, the stone coping of the nave and aisles has been renewed, the lead of the sills of the clerestory windows has been relaid, and the north and south porches have also been repaired. The gilded statue of St. Mary Magdalene on one of the pillars of the north aisle, which was the only one of many statues which suffered damage, has been restored and regilded. The total cost up to the present is £6,000, and £200 is in hand towards the cost of re-building the spire, which is estimated to cost £1,200. The re-hanging of the bells will cost another £800, so that from the present another £1,800 is required. An interesting feature of the re-opened church is the reredos which the vicar has presented. The design embraces the principal altar, in the chancel; subject, historical group of Our Lord and

some English Saints to illustrate "Our Lord Jesus Christ with His Saints." (1 Thess., 3, 13). 1, Our Lord; 2, St. Augustine of Canterbury; 3, St. Wilfred of York; 4, St. Oswald, K. and M.; 5, St. Edward the Confessor. Side altar—subject, historic group of the incarnation to illustrate "The Lord was made Flesh, and dwelt among us." (St. John, 1, 14). 1, Our Lord in His Mother's arms; 2, St. Anne; 3, St. Joseph; 4, St. Elizabeth; 5, The Archangel Gabriel.

SPIRAL STAIRWAY MADE OF PRECAST CONCRETE MEMBERS.

In the new Welland Canal locks a mooring gallery runs longitudinally through the lock wall for its full length at an elevation about 30 ft. below the top of the wall. Through openings into the lock from this gallery boats are moored during the locking operations, and as the water rises the lines are cast off of the bollards and the men go up through stairways to the top of the lock.



Details of narrow precast concrete stairway for Welland Canal lock wall.

These stairways for the larger part of the 30-ft. depth have been built in spiral form of pre-cast concrete members, according to the details shown in the accompanying drawing from *Engineering News-Record*.

In building the lock a cylindrical opening 8 ft. in diameter is left from the mooring gallery floor to the lock-wall top. With the exception of the lower 6 ft., which is in straight stairway, the whole staircase is in spiral form rising around a central concrete column made up of pre-cast hollow cylinders with each step a pre-cast concrete piece comprising a tread and the next higher riser.

The supporting cylinder blocks are each 2 ft. in outside diameter with 3-in. walls $7\frac{1}{2}$ in. high, reinforced with No. 15 gauge chicken wire. A radial opening is left in the wall of this annular ring of sufficient size to admit the stair unit. This stair unit, as shown on the detail, is sector shaped with the riser protruding 3 in. on top of the first and turned radially in a horizontal plane just sufficient to place the opening in the proper position to engage the next higher stair unit. The staircase is erected in this manner in successive units clear around the double turn to the top of the lock wall. After all the units are placed the opening in the cylindrical block support is filled with mass concrete.

In addition to the pre-cast pieces for the spiral stair unit, a pre-cast tread $12\frac{1}{2}$ in. wide and $1\frac{1}{2}$ in. deep is made for the straight approach section to the spiral staircase.

PROFESSIONAL AND TRADE SOCIETIES.

ARCHITECTS' AND SURVEYORS' ASSISTANTS' PROFESSIONAL UNION.—A general meeting of the London members of the above union will be held at 6.30 p.m. on Thursday, June 24, at Caxton Hall, Westminster, to elect a committee to govern the affairs of the newly-formed London Division, which will comprise the Metropolitan and City Police areas, the county borough of Croydon, and the county of Middlesex. An account of the National Convention will be given by the hon. general secretary, and an address by the union's first president, Mr. A. J. Penty, Lic.R.I.B.A. Non-members are cordially invited.

DEVON AND EXETER ARCHITECTURAL SOCIETY.—The annual meeting of this society, which embraces Devon and Cornwall, was held on Saturday, June 12, at the Athenaeum, Plymouth. The chair was taken by the president, Mr. Lewes Tonar, Exeter. The annual report was presented by the hon. secretary, and this, together with the balance-sheet, was read and adopted. The president delivered his address, and a cordial vote of thanks was proposed by Mr. A. S. Parker and seconded by Mr. James Jerman for his address and able conduct in the chair during the presidency. The following officers and council were elected for the ensuing year:—Mr. Antis George Bowes, A.R.I.B.A., President; Messrs. Jas. Crocker, F.R.I.B.A., and A. S. Parker, F.R.I.B.A., Vice-Presidents; Mr. Dobell, Hon. Treasurer; Mr. Allen Pinn, A.R.I.B.A., Hon. Secretary; Mr. A. R. Holman, A.R.I.B.A., Deputy Secretary; Mr. Lewes Tonar, F.R.I.B.A., Exeter; Mr. Russell Corfield, A.R.I.B.A., Falmouth; and Mr. B. Priestley Shires, F.R.I.B.A., Plymouth, members of the Council. Messrs. F. Jerman and Mr. B. Palmer were elected as associate members. The acting secretary was thanked for his services.

Sir George Frampton, R.A., the sculptor of the Nurse Cavell Memorial, has just been elected a member of the Corps Académique, Antwerp, in the place of Rodin.

Mr. Jacob Epstein is at present in Italy seeking good marble at more reasonable prices than obtainable here, and concurrently, relief from neuritis, from which we regret to hear he still suffers severely, the result of his Army service.

Mr. Anthony George Lyster, formerly of Gloucestre Gate, Regent's Park, N.W., civil engineer, a former President of the Institute of Civil Engineers and consulting engineer to the Mersey Docks and Harbour Board, has left £16,705.

"I have known many parapets, etc., fall owing to the air raids. No doubt the vibration of the guns may have loosened them, but why they should remain up for two years afterwards, and then fall, I can't explain," said the district surveyor at an Islington inquest last Saturday on Frederick Walter Birtles, 20, who was killed by a fall of coping.

Mr. W. P. Robinson, B.Sc., A.M. Inst.C.E., one of the county surveyors to the Devon County Council, has been appointed county surveyor to the Surrey County Council at a commencing salary of £1,200 per annum. The other candidates in the final list were Major A. H. Hamer (deputy borough surveyor, Stockport), and Messrs. R. H. Clueas (borough engineer, Hammersmith), and D. H. Brown (deputy county surveyor, Durham).

There are at present seventy-five houses in course of erection at Rochdale of which seventy-two are under the State-aided housing scheme. The number of houses certified during the last twenty years shows how great has been the slump in house building during the war:—

Year ending March 31.	Houses certified.	Year ending March 31.	Houses certified.
1901 ..	559	1911 ..	247
1902 ..	349	1912 ..	256
1903 ..	310	1913 ..	209
1904 ..	281	1914 ..	221
1905 ..	330	1915 ..	129
1906 ..	155	1916 ..	96
1907 ..	219	1917 ..	17
1908 ..	267	1918 ..	3
1909 ..	289	1919 ..	1
1910 ..	371	1920 ..	1

Total..... 4310

Our Office Table.

Mr. William Rothenstein, the artist, and Professor of Civic Art at Sheffield University since 1917, has been appointed Principal and Headmaster of the Royal College of Art, South Kensington, in succession to Mr. Augustus Spencer, who has held that dual position for twenty years. Prof. Rothenstein is a Yorkshireman, and was born in Bradford in 1872. Educated at the local Grammar School, he came to London in 1888, and worked under Legros at the Slade School. A period in Paris also added to his experience. He has been for many years one of the chief supporters of the new English Art Club. Two pictures by him hang in its present exhibition, and paintings and drawings of his are to be found in other institutions, including the British Museum, Tate Gallery, St. John's College, Cambridge, and Trinity Hall, Cambridge. Magdalen College, Oxford, the Metropolitan Museum, New York, the National Gallery, Melbourne, and the Walker Art Gallery, Liverpool.

To-morrow the members of the British Archaeological Association and the London and Middlesex Archaeological Society will visit the following threatened churches:—2 p.m., St. Magnus the Martyr. Speakers, Mr. Charles E. Keyser, M.A., F.S.A., J.P., and Dr. Philip Norman, F.S.A. 2.40 p.m., St. Clement, Eastcheap. Speakers, Mr. Philip M. Johnston, F.S.A., and Major R. Rigg, O.B.E., T.D., J.P. 3.30 p.m., St. Michael, Cornhill. Speaker, Sir Edward W. Brabrook, C.B., Dir.S.A. 4 p.m., St. Mary, Woolnoth. Speakers, Sir Aston Webb, K.C.V.O., C.B., P.R.A., and Mr. A. R. Powys, A.R.I.B.A. (Secretary of the Society for the Protection of Ancient Buildings).

An inquest was held on Saturday to inquire into the cause of the death of Francis Walter Eritles, who was killed by the fall of a cornice at 11 p.m. on Sunday, the 6th instant. Mr. Henry Lovegrove, F.S.I., A.R.I.B.A., for thirty-three years district surveyor, stated that on Monday, June 7, he was called by a police telegram to St. Paul's Road, Highbury, where he found that the main cornices of Nos. 264, 266, 268, 270, and 272 had fallen into the street, a small portion having fallen in the areas, the larger portion over the railings on to the street pavement. The houses were erected about sixty years since, and as was the custom at that time there was little or no bond between the front and party walls. A mobile gun was fired in the street here during the air raids, and there was much firing from a large gun in Highbury Fields, which, it is possible, shook the cornice, which was very massive and of great projection, with only a small portion of brickwork to tail it down. Verdict—Accidental death.

The Council of the Royal Institute of British Architects has been requested to hold an inquiry into the effect of the stoppage of building works throughout the country under Section 5 of the Housing Act of 1919. Building owners, architects, and others engaged in building operations are asked to furnish the Secretary of the R.I.B.A., 9, Conduit Street, W.1, with information in writing as soon as possible as to: Buildings which have been stopped during progress; buildings as to which warning notices have been issued; buildings which have been prohibited from starting under the following heads: The nature of the building so stopped; the cost of such building; the approximate number of men employed in the various trades on such buildings. Any information as to buildings which have been allowed to proceed, subject to the substitution of other materials for those originally intended.

In the Consistory Court of Liverpool the Chancellor (Mr. H. C. Dowdall, K.C.) delivered a considered judgment on Tuesday refusing a faculty for the erection of a war memorial, with a crucifix, at the Church of St. Luke, Southport. He said that an image was illegal in the Church of England if, by its character in external aspect and surroundings, it was specifically associated with practices which were condemned by the

Church of England, even though no evidence was called to indicate probability of superstitious abuse. The figure proposed, "with the fallen head and the closed eye," was associated with the doctrines which were repudiated at the Reformation and were still repudiated by the Church of England.

The thirty-eighth annual issue of "The Empire Directory of Local Authorities and Officials, and Year Book of Municipal Engineering and the Sanitary Record" (Sanitary Publishing Co., Ltd., 8, Breams Buildings, E.C.1, 7s. 6d.), is as trustworthy, complete, and indispensable as ever. Some six thousand municipal and other local authorities in the United Kingdom and the Overseas Dominions are given, with the names of all their officials. A diary and trade directory and many other useful features are included.

A committee on smoke abatement, sitting at the Ministry of Health, has agreed upon an interim report which will be issued in a day or two. The committee found that in the plans for new buildings under housing schemes throughout the country practically no attention has been paid to the introduction of stoves and fireplaces designed to reduce the emission of smoke to a minimum. The committee calls attention to the importance of the adoption of the most modern methods of dealing with smoke, and offers some useful recommendations for the consideration both of local authorities and of private builders. The committee also recommends the strengthening of the law against air pollution generally.

STATUES, MEMORIALS, ETC.

FRENCH MEMORIAL TO EDITH CAVELL.—In the Tuileries Gardens last Saturday the monument to the memory of Edith Cavell, presented to the City of Paris by the *Matin*, was unveiled. The monument is from the chisel of M. Gabriel Poch, and represents the body of the dead heroine, upon whose limbs rests a heavy helmet, the emblem of Prussian tyranny. In the name of the *Matin*, M. Stéphanie Lauzanne declared that even more deeply than this monument was engraved would the memory of Edith Cavell remain graven in the hearts of free peoples. Little children would spell out each page of her tragic history as they spelt out the sacrifice of Iphigenia and the agony of Saint Joan of Arc. Speaking in French, Lord Burnham paid a tribute to the friendly sentiment which had prompted our Allies to erect this memorial. He had been, he said, for twenty years on the committee of the London Hospital, to which Nurse Cavell belonged. "Her memory would be our proudest possession and our finest appeal. She was not distinguished in her hospital career from the multitude of good women who devote their lives to the care of the sick poor. She was just a good type of a London Hospital nurse. The crisis of her fate and the fate of humanity brought out the radiant and tempered metal of her character."

THE SELOUS MEMORIAL.—When he fell at Belo-Belo, in German East Africa, in January, 1917, fighting the Germans, Frederick Courtenay Selous found a fitting end to his long life of adventure in Africa. Equally fitting was the selection of a gallery in the Natural History Museum at South Kensington as the place for a memorial to him in his native land. The memorial, which was unveiled on June 10 by Viscount Grey of Fallodon, takes the form of a bust in bas-relief, and is the work of Mr. W. R. Colton, R.A., who was born in Paris, studied modelling at Lambeth, and exhibited at the Royal Academy when he was only twenty-two years of age. Mr. Colton executed the Royal Artillery memorial in the Mall, the memorial fountain in Hyde Park, and many other works, and he was Professor of Sculpture at the Royal Academy for five years. The granite from which it has been formed came from the Matopos Hills, the burial-place of Cecil Rhodes and Sir Starr Jameson. It was presented to the Selous Memorial Committee by the Government of the Union of South Africa in recognition of the famous traveller's services to the Union in the pioneer work of opening up South Africa. The inscription on the monument was: "Captain Frederick C. Selous, D.S.O., hunter, explorer and naturalist. Born 1851. Killed in action at Belo-Belo, German East Africa, January 4, 1917."

Since the war 41 per cent. more electricity has been used in the City of London.

CHIPS.

The Ministry of Health has refused the Borough extension proposals submitted by Newcastle-under-Lyne and Stoke-on-Trent Corporations.

At a cost of £35,800, the London County Council are purchasing 1,225 acres for the settlement of ex-service men on the Cobham Hall estate, Chalk, near Gravesend.

Suffering from severe injuries caused by falling from the top window of his offices in Ilford, Mr. E. T. Dunn, a well-known local architect, was admitted to the Ilford Emergency Hospital on Monday last.

The Government was defeated in Standing Committee of the House of Commons on Tuesday on a proposal to include business premises in the Rents Restriction Bill. Dr. Addison resisted the proposal, but it was carried by 15 votes to 12.

The Walsall Town Council decided on Monday last to discontinue direct farming operations at Brockhurst Sewage Farm, and to let the farm to a tenant. It was explained that this course was being taken in consequence of the losses incurred on the farm for many years past.

The French Prix National has been awarded to M. Paul Dardé, a young sculptor who began life as a shepherd boy in the Cevennes Mountains, for a symbolic piece entitled "Eternal Grief." Even more striking is said to be a gigantic conception, "The Faun," which Dardé is also exhibiting.

Local experiments are being carried out at Vancouver in the building of houses from marble dust and sawdust. It is claimed that the cost will be 6 cents a foot, in place of a present cost of 60 cents for ordinary house construction. The material is reported to be very durable and to take a high polish.

The presentation of the R.I.B.A. Royal Gold Medal, originally fixed for Monday, June 21, has been postponed till later in the year, when it is hoped that M. Girault will be present to receive the medal in person. The new date cannot yet be fixed, but full notice will be given as soon as definite arrangements are made.

The decision of Mr. Justice Darling that a tenant who pays his landlord's property tax and omits to deduct it from his next payment of rent has no right to deduct it afterwards was affirmed on Tuesday by the Court of Appeal—Lords Justices Bankes, Warrington, and Scrutton. (Hill and Others v. Kirshenstein and others.)

The "Semouse," familiar on French postage-stamps as well as on the silver coinage, is shortly to be supplanted as far as postage-stamps are concerned. Designs are now being submitted by artists to the Ministry of Fine Arts, all of which illustrates the military victory of France and the historical mission of France in the world.

The London County Council site of 252 acres at Bellingham, in the Borough of Lewisham, has been laid out for the erection of 2,055 working-class homes. Fifty-two acres have been allocated for the erection of other than working-class dwellings, and 23½ acres are to be devoted to market gardens or allotments. A tender of £2,700,000 has been submitted to the Council.

At the North London Police Court last Saturday the first prosecution in London under the Act which makes it illegal for houses adapted for dwellings to be used as workshops without the consent of the London County Council came before Mr. Forbes Lankester. The defendant was Myer Simbolist, a cabinet maker, of Clarissa Street, Shoreditch. Mr. Forbes Lankester imposed a fine of 40s.

At last week's meeting of the Cabinet's Sub-Committee on the building programme the estimates of the Ministry of Labour for provincial buildings were reduced from £529,800 to £385,300. The whole scheme for building at Birmingham is dropped, and £15,000 saved. The Ministry of Labour might just as well be demobilised for any good it does, and the whole cost of the buildings saved. They are "luxuries" of the most needless sort.

Several disappointments to would-be builders in Birmingham were handed out by a sub-committee of the Housing and Estates Committee, sitting on Tuesday as the Production Committee to adjudicate upon applications concerning luxury building. Mr. Seward James, who presided, informed each set of applicants that the reason why they were summoned before the sub-committee was that the Housing Committee needed 269 bricklayers for jobs in hand, and were deficient of 117, or 43 per cent. of the total required.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

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Currente Calamo.

The Architectural Association "Brown Book" for 1920, which includes the Reports for the Sessions 1917-1918 and 1918-1919, is restored, and more, to its old size, and contains full particulars of all the activities of the Association, which are being steadily developed, and a complete programme of the Session for 1920-21. We hope every reader not already a member will get a copy and make haste to join. No other institution offers the same advantages, especially to the junior members of the profession. It is pre-eminently the School of Architecture, and ensures for every student not only the best education he can procure, but the comradeship of the men who will win fame—and we trust fortune as well—in the next generation. It includes an excellent Athletic Club, which covers all the healthy sports in which young men delight, and in which they can join in good company, and with the certainty of finding competitors worthy of their mettle. There are many other amenities which should induce provincial young architects to join. They will save the subscription many times during their visits to London. There is the best lunch at the price to be had at the Club, and other social amenities which will make the visitor more at home than he can find himself outside his home circle. And, not least, if last, in the long lists of members and part officers since 1847 he will find the names of every architect of repute, and in the *clat* with which they have invested the "A.A." he will find the best guarantee of help and encouragement to add his own name thereto in the coming days of success, and wholesome sympathy.

For the present a national lock-out of carpenters and builders—and, probably all other sections of the building trade—has been averted—perhaps we had better say postponed, by the firmness of the English Master Builders. The crisis arose as the result of the action of the Amalgamated Society of Carpenters and Joiners, which a few weeks ago gave notice withdrawing their members from Scottish building firms, in order to enforce a new wage demand. The Scottish building trade employers are not as a body federated with the National Building

Trade Employers' Federation, and all wage applications are discussed by a Joint Wages Committee, but the great firm of public works contractors (Sir Robert M'Alpine and Sons) are members of the Employers' Federation, and the Carpenters' and Joiners' Society called out all their members from Messrs. M'Alpine's works in sympathy with the decision of their Scottish branches. When the Conciliation Board for the Building Trade met last week a request was made for the withdrawal of the notices tendered in respect of the firm of Messrs. M'Alpine. The Amalgamated Society refused to do this, and the master builders promptly decided to adjourn the Board until the notices were withdrawn. The leaders of the National Federation of Building Trade Operatives realised that the position was awkward, and Mr. Hicks, the president, and Mr. H. Bradshaw, the secretary, had a conference on the matter with the Executive of the Amalgamated Society of Carpenters and Joiners at its headquarters in Manchester on Monday, and in the end the Executive agreed to withdraw the notices affecting the operatives in England. The national crisis is thus for the present removed, though the dispute in Scotland continues. Our own conviction is that war is meant, and that events are following the same track as they did in 1859. Then, as now, a leading building firm was selected as the scapegoat. Then Mr. George Potter rode the high horse, blundering tactically as the Amalgamated Society of Carpenters and Joiners have blundered now. Then, as we traced at some length in our article on "The Document" of 1859," on page 384 of our issue of May 21 last, the London Master Builders recognised that union was their only strength in the face of a struggle in which it was meant to attack and beat them singly. We are glad that is seen to-day sooner than it was then.

The Government rushed the Rent Restriction Bill through the House of Commons on Monday, with the result that it will please neither landlords, tenants, nor the homeless; but, on the contrary, will cause friction and probably provide litigation all round. The man who rents a house will complain that it allows the landlord to raise the rent as much as 40 per cent. without undertaking repairs badly needed to right the decrepitude of

the war years. He finds, too, that the Bill provides no real guarantee that he will not continue to be ejected with the excuse of "alternative accommodation" that does not in fact accommodate. The man who is homeless has little interest in the measure, for he knows that only by the building of new houses can his case be really met. The business man will suffer by the Bill, because, unless he lives on his premises, he will get no good from it, but be left to pay what rent his landlord may demand. And the landlord, recognising that the measure will involve him in complex disputes with tenants and the sanitary authority as to the amount of repairs to which he is liable, will demand that land should be treated the same as any other commodity—a plea which, since the scrapping of the valuations of the 1909 Budget, he may well advance. In the face of universal criticism the Government has driven the Bill through, compromising a little here and there, but never adhering to one guiding principle, and the result will be lamentable every way.

At the Birmingham Police Court last Friday, an important test case, the first of its kind in the Midlands, was brought forward by the Corporation, relating to the question of housing accommodation. The Birmingham Industrial Co-Operative Society, Ltd., were summoned for, during the month of May, unlawfully, without the permission in writing of the local authority, using, otherwise than as a dwelling-house, as a shop and store-rooms, the houses Nos. 206 and 208, Washwood Heath Road. The case was brought under the Housing (Additional Powers) Act, 1919. The relevant section says: "If any person at any time after the third day of December, 1919, without the permission in writing of the local authority, uses otherwise than as a dwelling-house any house which was at that date, in the opinion of the local authority, reasonably fit or reasonably capable without reconstruction of being rendered fit—for human habitation," he shall be liable to a penalty. On behalf of the Corporation counsel said the expression "dwelling-house" meant a building constructed or adapted to be used wholly or principally for human habitation. Both houses were occupied by families until January last, but prior

to alterations there was a shop in each of the houses on the ground floor. The Assistant Medical Officer of Health said it was evident that the parts which previously were used as a dwelling-house could not be so used now. All the amenities of a dwelling-house had been removed. Counsel for the defence contended that he had no case to answer. It was admitted by the prosecution that on March 18 the premises had been so altered that they would have to be altered back again before they would be suitable for human habitation. How, then, could it be suggested that in May his clients were using a house reasonably fit for human habitation? Mr. J. P. Bridgewater, architect, of 147, Corporation Street, said the premises were originally designed by him principally for use as shops. Mr. Willison contended that as the premises were constructed principally as a shop the matter did not come under the Act. The magistrates agreed with this view, and dismissed the summonses on the question of fact.

The movement for the demolition of nineteen City churches is being vigorously opposed by the antiquaries of London and the Home Counties. On Saturday last the British Archaeological Association and the London and Middlesex Archaeological Society made a tour of four of the threatened churches. First, to St. Magnus the Martyr, whose handsome tower and spire-let is familiar to every passenger over London Bridge. There has been a church here since, if not before, the days of the Conqueror. There to-day is a masterpiece of Wren, enshrining the remains of Miles Coverdale, who published the first complete translation of the Bible into English, and including a reredos as fine as any in the City. Dr. Philip Norman described all these, and proposed a resolution condemning the suggested demolition, and demanding that the church be preserved inviolate to posterity. Dr. Cato Worsfold, M.P., seconded, and all present approved. Thence to St. Clement's, Eastcheap, another Wren, which, as Mr. Philip Johnston explained, has suffered under the hands of the restorer, even to removing the Norman axe-tooling which was to be seen on the base of the tower a few years ago. The scheme of demolition must be condemned root and branch, he said, in proposing a resolution to that effect, and Major R. Rigg, seconding, hoped the proposals of an iconoclastic Bishop and a vandalistic Church would not prevail against the forces of righteousness. At St. Michael, Cornhill, Sir Edward Brabrook mentioned that a Christian church had stood on that site for 865 years. As one born in the parish more than eighty years ago, he eloquently condemned the proposed destruction. At St. Mary Woolnoth, the last of the churches visited, Mr. A. R. Powys, secretary of the Society for the Protection of Ancient Buildings, spoke of the magnificent advantage which Nicholas Hawksmoor, the architect, took of the site at his disposal. He built a church that he foresaw would one day stand like a ship

breasting a sea of traffic. Mr. Powys condemned the taste which had allowed the entrance of a tube railway to spoil the effect of the church, and in stronger language condemned those who would now destroy the church itself. Mr. C. H. Hopwood, who proposed the resolution of protest, said that the Bishop of London, who desired union with Nonconformists, did not know the history of the churches under his charge or he would not think of the demolition of a church like St. Mary Woolnoth, which was as dear to Wesleyans as to those of his own communion. The campaign of protest is to be continued on June 29, when visits will be paid to St. Mary the Virgin, Aldermanbury, St. Alban, Wood Street; St. Anne and St. Agnes; and St. Botolph, Aldersgate.

Mr. Delissa Joseph has published as a pamphlet his paper "Higher Buildings for London," read before the R.I.B.A., and the discussion thereon. As our readers know, we have said that his very reasonable and practicable proposals would materially help to solve the housing problem, and would transform festering regions of slumdom into open spaces enjoying light and air, and the next best alternative to the country home which rising fares and bad railway management generally are rendering more and more impossible for all of us. We are very glad that a committee of the R.I.B.A. is to consider and report on the matter. We all feel that, as the president of the R.I.B.A. said in his able summary of the discussion, there *must* be reasonable modifications of the Building Acts, and the Committee's Report will be the best possible guide to public opinions. If common-sense prevails, then, as Mr. J. Campbell Reid well puts it in his interesting note to the discussion, there will be a wonderful opportunity for architects who will be called upon, subject to the necessary conditions of light and air, to design higher buildings with beauty and safety.

Winget, Limited, regular supporters of the Royal Agricultural Show for many years, have probably done more than anyone in this country to prove the value of concrete block construction for the estate and farm. Their stand this year (No. 427) includes a number of outstanding novelties, besides the well-known standard 32 in. block and slab-making machine and its younger sister, the "Winget" pressure machine, which has been specially designed for the erection of cottages and small housing schemes. The wide range of the 32 in. block-making machine extends to the manufacture of agricultural field-drain pipes in concrete. Its blocks and slabs have been employed for the building of concrete cattle-sheds and pig-styes with the best possible results, the vermin-proof and other hygienic qualities of the material, together with its durability and its simplicity of construction, rendering it specially suitable for farm buildings of every description. One of the most striking features of this stand is the new "Winget" portable elevator, which will

not only lift concrete blocks, bricks, gravel, sand, and the like, but also handle and transport many other kinds of material, emptying them into any wagon or truck. Time and labour are thus saved in many different ways. A second novelty is the machine for making concrete-roofing tiles which ensure a permanent, weather-tight, and economical roof. The "Winget" stone-breaker and crusher is another notable addition to the output from the same enterprising firm. This powerful machine crushes the hardest rock, stone, or brick, to the finest possible aggregate for concrete work. The latest types are also shown of the "Chain-Spade" mixer, one type driven with the 3 h.p. engine, and the other with electric drive. This is admittedly the best machine on the market for mixing semi-dry concrete.

"MAN AND HIS BUILDINGS."

We have read with considerable interest the little volume issued last Tuesday by the Swarthmore Press, Ltd., of 72, Oxford Street, W.1, at six shillings, under the above title. It is written by Mr. T. S. Attlee, M.A., A.R.I.B.A., and is largely an expansion of an essay on "The Influence on Architecture of the Condition of the Worker," which gained for its author the Silver Medal of the R.I.B.A. in 1914. That essay in its turn was largely inspired by Ruskin's chapter in "The Stones of Venice" on "The Nature of Gothic," and is an attempt to apply the principles enunciated there more widely.

The first six chapters deal successively with the architecture of Egypt and Greece—"Darkness and Daylight"; Rome and Byzantium—"Frost and Thaw"; Gothic I.—"Adventure"; Gothic II.—"Exultation"; the Classic Revival—"Playtime and Pedantry"; To-day—"Chaos"; and the Future, "Revolution." We have little to say to-day about any but the last chapter, if only because during the last sixty years we have been through the same mill and ground out a good deal of stuff which probably many readers found out was mere chaff long before we thought so. The more so, perhaps, because we are not so sure as we once were that political or theological systems have, or have had, any great influence on Art. As Frederico Harrison reminded Ruskin in 1876, they have often been concurrent with times of especial violence in our life and society. When the Thesens was carved, Aristophanes gives us the domestic and public life of the Athenians, and it has its dark side. Titian was the contemporary of Palladio, and also of Philip II., Milton of Sir Peter Lely and Louis XIV. In our own time E. W. Godwin, whose work entitled him to the first place among his contemporaries, failed, for reasons to which we need not recur. That the sense of Beauty is always associated with "the only hope, the knowledge that God is Love," we are not so sure. How, indeed, when as Mr. Attlee himself admits:—

"But we dare not say it, it sounds so much like cant. How can we dare to claim that Love should rule the policies of empires when we ourselves fail every moment of the day to walk in its light in the most trivial domestic affairs? Breakfast late when you are punctual, or vice versa, and your smiling angels turn to malicious little goblins. Race for a train with a heavy bag, and your fellows stand in ranks of obstructive stupidity, who yesterday were the cheeriest fellow-actors on your humorous stage. Your own personal inconvenience, disappointment, comes in like harlequin and works a transformation scene before you know it.

"Real Love," says Halliday, "is a personal identification of yourself with another." Every

now and then we capture it for a moment; then we get between our friend and the light, and are offended that he is so gloomy. We expostulate with him, or forgive him, and we don't see that it is our own shadow that makes him so black. It is the shadow of our own selfishness, personal and national, that makes the gloom that we shudder at to-day. Turn the light upon those figures and the fiends become friends. It is the damning defect of the state of competition and suspicion in which we live, that it divides man from man, it hides man from man, it destroys community."

Is it altogether? Mr. Attlee thinks it is. Is it not rather as he puts it on p. 163 that "We see as the Gothio builders saw," whether "in the 'most Christian spirit' or not, 'the necessity of accepting imperfection, failure, humiliation, since the demand for perfection means the organisation of slavery'?" That, at any rate, is our own view, after many years of disappointment with the panaceas of the apostles of perfection reached by short stages. Mr. Attlee thinks differently and assures us that

"All these forces are seen working most strikingly in the proceedings and achievements of the Industrial Council for the Building Industry (Building Trades Parliament), a new institution—it was only born in 1916—which is making revolution with a speed that is truly astonishing. Originally conceived by an employer of imagination, who combined with that rare gift unusual faith and tenacity, the idea was welcomed by the principal trade unions in the building trade (National Federation of Building Trade Operatives), who drafted a proposal for a Builders' National Industrial Parliament, which they laid before the building trade employers (National Federation of Building Trades Employers of Great Britain and Ireland), who in their turn adopted it—a brief statement which is sufficiently staggering to those familiar with the relations of employers and employees in the building trade."

Well, we said what we thought about the Foster Report in our issue of August 20 last. We see no possibility of benefit to the building industry being likely to accrue from any progress along the lines of what is known as the "Foster Report," which aims "to develop an entirely new system of industrial control by the members of the industry itself, and to bring them into co-operation with the State as the central representative of the community which they are organised to serve." So far, as we think, the "Building Trades Parliament" with its "Guild Socialism" has done little to encourage the hope that we shall by its aid achieve "that Freedom and Association which is necessary to the creation of Beauty."

We have all had enough of the State during the last seven years. No one has benefited except the politicians, and their protégés, the place-hunters, whose orgies of extravagance and freaks of favouritism have brought us next door to national bankruptcy, while the profiteer is riotously rampant. Our own fault, in great measure, because we have forgotten that "the price of Liberty is eternal vigilance," and that real betterment is only obtainable by struggle.

No really forward movement, in our own opinion, is worth pursuance that leans on charitable or State aid. Mr. Attlee has not read "Fors Clavigera" as carefully as "The Stones of Venice," or he would have discovered why the St. Georges Company broke down. Thirty persons, "none of them rich, several of them sick, and the leader of them at all events not likely to live long," started "the general medicining, enriching, and preserving in political strength the population of these islands," relying mainly on "gifts, either in money, labour, or any kind of gift." The Constitution of the Company will be found in Letter LXVII. Why did the scheme fail? As Ruskin

writes in Letter LXVI., "One of the men whom I thought I had ready for the Worcestershire land, being ordered for trial to do a little bit of rough work in Yorkshire . . . threw up the task at once, writing me a long letter of which one sentence was enough for me—that 'he would do his share and no more.' These infernal notions of Equality and Independence are so rooted now, even in the best men's minds, that they don't so much as know even what Obedience or Fellowship mean! Fancy one of Nelson's or Lord Cochrane's men retreating from his gun with the avowed resolution to 'do no more than his share!'"

Fancy the feelings of some of us, whose normal day's work is fourteen hours of struggle to keep things going, when we read the Foster Report's proposals to "turn employees into managers, guarantee the workers against unemployment, regulating demand, pay the unemployed," and all by "hiring" capital from the State at the cost of the burdened taxpayer!

A STAINED-GLASS TOUR.*

BY BRIGADIER-GENERAL CHARLES H. SHERRILL, LL.D., OF NEW YORK.

It is rather as a traveller, a mere sightseer, that I should come before your honourable Society to-day, and not as one laying claim to any especial knowledge of the charming craft whose product we call "stained-glass." So glorious are those combinations of colour and light, that I am convinced that if only more people could be enticed to look upon them, their inherent charm would so lay hold upon these casual observers as to make them as devoted enthusiasts as I myself have become.

In that spirit let me ask you to accompany me upon a stained-glass tour, which, I hope, will prove but a preliminary to more extended ones by not a few of my hearers. We will cross the Channel several times, for, alas! like true love, the course of ancient glass never did run smooth in either England or France. Italian glass began much later than the French, ripened more quickly, and ended earlier; while in Germany the craft, beginning early, developed methodically with no serious interruptions, and ended late. We will begin by looking at some twelfth and thirteenth century examples of the *peintres-verriers'* art in France, where those two periods produced so many and such fine examples of their art, whilst little or none was being made on this side of the Channel.

Those artistically fruitful years were followed in France by the dark days of the fourteenth and fifteenth centuries, when the so-called Hundred Years' War so long outlasted its title, and when the constant harrying of France by English forces, combined with plague and uprisings of peasantry, checked the output of such artistic luxuries as stained-glass windows. But, fortunately, both for us and the craft, we need only return across the Channel to find here in your island home a veritable outburst of coloured windows, lasting all through the fourteenth and fifteenth centuries, changing in expression, however, as your architecture developed, through the budding and blossoming of your Decorated and Perpendicular styles.

By the time the sixteenth century arrived, your glass men would seem to have shot their bolt, and to have almost ceased from practising their profession, so slight is their output thereafter. The Renaissance, so vitalising a movement on the Continent, did not seem to show such a compelling revival of art initiative with you as it did with the French, which, perhaps, is but natural, for the Italian wars of Louis XII. and Frances I. had not only shown their soldiery the ancient glories of Italian art, but had also, through the trophies they brought home with them, fired the imagination of French artists in all fields of production. You lacked these military

missionaries of classic art, and therefore we must once more leave England and cross the Channel to follow our studies.

So markedly did the different styles of glazing alter with the changing centuries or periods, that it needs no profound student to recognise the approximate date of a mediæval window. During the sixteenth century, the French glaziers had the obliging custom of dating their work, either quite openly or else with artistic coquetry—as in the case of a window at Les Iffs, where the date is marked on a coin held by one of the figures. Heraldic blazons, so much more frequent in England than in France, are very helpful in fixing not only the time of manufacture, but sometimes even more than that, for it is the shields set out upon Gloucester Cathedral's east window that tell us that it commemorates those gallant English knights who fought at Crécy. Because the St. Edmund window in Bristol Cathedral shows the arms of Humphrey de Bohun, Earl of Hereford, slain in open rebellion in 1322, and does not bear those of Piers Gaveston, murdered in 1312, we can safely date the glass somewhere between those occurrences, say 1320. Because in one of the towers of Knole, that delightful and stately home of old England, a morsel of glazing high up in a tracery light, shows the double bowknot of Bishop Bouchier of Canterbury, we know that this portion of the ancient pile is at least as old as his tenancy there, which was 1456-86. Blazons are not so helpful in France, both because their heraldry was not so precise as the English, and also because an edict in 1792 caused the destruction of many of them. And this destruction was continually going on through the centuries, sometimes chargeable to misfortune alone, but frequently to deliberate act. The Huns near Rheims have not been the only vandals from whom this handicraft has suffered. Aubrey's "History of Surrey" records that during the Reformation "one Besse was hired for half a crown a day to break the painted glass windows of Croydon." At Lincoln the citizens practised shooting with the cross-bow at the Cathedral's windows, while at Great Malvern they quite simply threw stones at them! As early as 1330, the Commune of Assisi had to impose a fine of five lire for throwing stones at their great church's windows. When Rome was besieged by the Bourbon in 1527, its numerous ancient windows were broken up to get their wealth of lead for bullets. And sometimes peace was destructive as war, for when Charles V. was being crowned Emperor by Pope Clement VII. in Bologna Cathedral, the salvoes of artillery broke much of its old glass. At Salisbury, during Wyatt's ruthless restoration, we read that "whole cartloads of glass, lead, and other rubbish were removed from the nave and transepts and shot into the town ditch, then in course of being filled up; whilst a good deal of similar rubbish was used to level the ground near the chapter-house." It is somewhat consoling to learn that in 1632 the Recorder of Salisbury, found guilty of destroying the Creation window in St. Edmund's church (in order, forsooth, to let in more light!), was imprisoned, fined £500, and made to apologise to the Bishop of Salisbury. After reading the boast of "Blue Dick Culmer," the Minister at Canterbury Cathedral during the Commonwealth, of his "rattling down proud Becket's glassie bones with a whole pike in his hand, when others present would not venture so high," we may be pardoned the anachronistic wish that the knights who slew Becket there had chosen Culmer instead.

Glass of the twelfth and thirteenth centuries was made up of much smaller bits than are later seen, and because this meant, to hold them in place, a labyrinth of light-obscuring lead lines, and also because even uncoloured glass was then less translucent than it is to-day, dimly-lighted interiors were the natural result. The little figures that peopled the panes in those early days were collected together in groups within borders shaped like medallions, so this orderly arrangement resulted in their type being called "medallion glass." English medallions tended to be smaller than their French cousins, because Early English lan-

* A Lecture delivered at the Royal Society of Arts on April 28, 1920.—From the Journal of the Society.

cets were narrower than contemporary French embrasures. In Italy the medallions were more varied and fantastic in their shapes than in either England or France. Sometimes this glass is called mosaic, because made up, as is mosaic, of such small bits of glass. Thirteenth century glass is famous for its jewelled glitter, caused by the diminutive panes breaking up and combining the rays of light. This was not the result of chance, for in the twelfth or preceding century the pieces of glass were distinctly larger, which, of course, meant correspondingly less labour in winding about the supporting leads. Perhaps the finest of all the very early windows is just on the right as you enter the nave of Le Mans Cathedral. Note the Early Norman arch to the window embrasure, and the very broad border then customary. In England, the round Norman arch over a broad embrasure soon gave way to the Early English lancets, narrow and pointed at the top. In these latter, only narrow borders were possible. Closer inspection reveals that this scene is the Ascension. The drawing on these very early windows is so exactly like that on contemporary enamels and on mosaics, and stained glass begins as such a finished art, that there is no doubt it owes much to the enamel draughtsmen and to the earlier ones in mosaic. These very panes were among those that softened the light falling upon the baptism of your Henry II., for it was in this church that in 1133 Henry Plantagenet was christened, and we know that this glass was already in place, for it was the only window that survived the great fire of 1120.

Next we see a bit from the oldest known window of St. Denis Cathedral, in whose vaults lie entombed so long a line of early French sovereigns. The abject figure at the bottom is Abbot Suger, who gave the window. Later on the donors grew to be far less modest. Note the bands of lettering done by scratching upon blackened strips of glass. At this time the glass was coloured through and through in the pot, and is called pot-metal glass. Surface pigment was used only to delineate the features, and occasionally to bring out folds of garments. This pot-metal glass persisted much later in Italy than elsewhere.

This other early St. Denis panel shows a Tree of Jesse, a design whose popularity endured throughout the entire life of mediæval stained glass. The vine springing from the loins of Jesse becomes more and more ornate as the centuries advance. Notice that we have here a much-peopled border, which was infrequent except in the case of Jesse windows. The lower right-hand figure was the donor of the window, and he holds its model in his hand, as was often customary.

This glimpse of the choir chapels in Bourges Cathedral gives some idea of the lighting effects produced by medallion glass, truly "a dim religious light," which is here as excellently displayed below as, above them, greater illumination is afforded by the long row of forty-five small roses and the stately garrison of tall single figures.

This Chartres window shows how the glazier combined different shapes of medallions so as gracefully to complete his space composition. The interstices he filled with what is called strap-work, generally of red and blue bits, so interwoven together as to produce a grape-juice purple, more mellow in colour than a single pane of purple. The four thousand figures on the 174 windows here still filled with their original thirteenth century glazing, tell in the minutest detail the life of the time. The windows along the nave aisles were presented by different trade guilds of the city, and fully set out their life and occupations. If the gorgeous set of thirty-six kings that used to adorn the Rheims clerestory justified its title of Royal Rheims, then surely at Chartres this glass, pulsating with colour, preserves for us the great heart beat of the mediæval middle classes.

Angers Cathedral is especially interesting for the glass, lighter because here can there, more readily than anywhere else, compare the larger pieces of these twelfth century windows in its nave with the tiny morselled

ones of the thirteenth century in the choir, and see for himself how the latter glisten and glitter, while the early ones show but flat colour, warm in tone though it be.

When Louis IX. (St. Louis) succeeded in obtaining a fragment of the true Cross, no more suitably sumptuous a receptacle could he imagine for it than a sanctuary whose walls should be sheets of light-admitting colour, and so there was built for him in three years' time (1245 to 1248) the Sainte Chapelle of Paris, where to-day it stands protected from the modern street life of that gay capital by the serious buildings of the Law Courts. This bower of light steeped in colour should be visited on a cloudy day, for the pursuit of stained glass is as truly a rainy day sport as is that beloved of Izaak Walton and other fishermen. On a sunny day the glass towards the sun will seem thin in colour, while that on the shady side will be dull and flat-toned.

The north rose of Notre Dame is not only a *chef d'œuvre* of lacelike stone-work and of design, but also very deceitful in its colouring, for although, thanks to the deft juxtaposition of its red and blue panes, it is a purplish window, it really contains no purple glass. Frequently these great wheels of light and colour enjoyed pleasantly familiar names. At Amiens the westerly, northerly, and southerly ones are called the Rosaces of the Sea, of the Winds, and of Heaven respectively. The northerly one at Chartres is the Rose of Heaven, while at Lincoln the two roses are called the Dean's Eye and the Bishop's Eye. The skilful wall-adjustment of these great rosaces in French cathedrals is most delightful, and frequently, as here at Notre Dame, the giant wheel is balanced below by a gallery of sturdy worthies of the past.

Such a line is to be seen just below the northern rosace of Chartres Cathedral. Note that in the early faces the glass is not white but brownish, making these gentry appear rather too sun-burned for Caucasians. This tint was better than would have been the untinted glass of the period, for it was not white but greenish. These great figures, "like watchmen on a leaguered wall," were frequently stationed around French clerestories during the thirteenth century, and served the useful purpose (by reason of their larger pieces of glass, and therefore less leads) of letting in from above much more light than was permitted below them by the mosaic medallion panes.

The graceful symmetry of the Sens Cathedral medallions is completely satisfying. It is no wonder that Thomas à Becket fell in love with them! We make this rash assertion confidently, for we know that he lived in Sens from 1166 to 1170. Pope Alexander III. spent two years at Sens immediately before that, and therefore both these famous churchmen saw the great architect, William of Sens, there developing the pointed arch, which meant the new Gothic architecture to all those church dignitaries who came thither from all over Europe to visit the Pope, and returned home to spread the gospel of Gothic. Later, in 1174, when the choir of Canterbury Cathedral was rebuilt, William of Sens was brought over to supervise the work, and the unfortunate architect met an untimely end by falling from a scaffold before his task was completed.

That William brought his glassmen over with him needs but a glance at the early Canterbury windows to reveal. In those below and around "Becket's Crown," at the extreme easterly end of the choir, we see blood-sisters of those in the Sens choir chapels, and always the same well-balanced disposition of the medallions within their borders, which will continue broad in the French manner until the wide Norman windows yield to the narrower Early English lancet. These windows date from the middle of the century.

A closer examination of the detail in these medallions shows spirited action on the part of their small inhabitants, and from them much is to be learned of the customs of their day.

On the north side of Canterbury Cathed-

ral's Trinity Chapel there is a very simple arrangement of the stories up and down the panes. It makes quite a human touch in Chaucer's "Canterbury Tales," when he has his pilgrims, as soon as ever they have entered the cathedral, fall to studying out the legends on the glass. His choice of title for this poem was a shrewd one, for he knew well how very many folk all over the kingdom had made this pilgrimage, and would therefore wish to read his "Tales."

Quite different and particularly graceful is the fanlike adjustment of the panels employed on this chapel's southerly side, and one far from easy to compass. The mellow richness of the old reds and blues here is delightful.

Although this chapel is not of sufficient width to allow the spectator to enjoy the glitter of the early glass, which needs a greater distance to develop, a recompense is found in the opportunity for close inspection and study of the Bible stories nowhere else surpassed. We cannot do better than follow the example of Chaucer's sight-seeing pilgrims.

At the very top of one of these windows there appears the only extant picture of the famous golden shrine, which contained the martyred prelate's mortal remains. It shows the saint issuing from the left end. So highly was this shrine venerated, that we are told that during the Jubilee of 1420 no less than one hundred thousand pilgrims visited the city in one day, and their gifts to it totalled a huge value. We know that so late as Henry VIII.'s time, he was able to find and seize twenty-six cart-loads of booty from about the shrine. It is a striking comment upon the charmed life borne by this glass that, notwithstanding its fragility, it should have preserved the only picture of this world-famous shrine. It must have been a true likeness, for it was so close to the original that any but a careful copy would have failed to tell its story to the pilgrims.

One of the greatest glories of glass anywhere in the world is the group called "The Five Sisters," at York. That city, whose Minster alone contains over 25,000 square feet of ancient glazing, ranks with Rouen and Troyes as a great glass centre, and, like them, has many examples from each of the centuries when the art was at its best. These "Five Sisters" are of a type called *grisaille*: they told no story like those of the medallion type, but, on the other hand, they did not obscure so much light, and were therefore more practical. In England, your glaziers were fond of relieving the monotony of the *grisaille* panes, not only with occasional glimpses of colour, but also by outlines of plants, leaves, or vines. Here we have the leaves of the benet plant. There was also much fine old thirteenth century *grisaille* in Salisbury Cathedral, where, you will remember, there was a window for every day in the year, a door for every month, and a pillar for every hour. Old Thomas Fuller called it "an almanac of architecture."

Another whim of these early artists was to use tints which, though seemingly inappropriate, were nevertheless so deftly adjusted to the general colour scheme as to be entirely satisfactory. Many a visitor to Poitiers Cathedral has gone away without realising that, in its gorgeous Crucifixion window, the cross is red and the hair of the Saviour blue! I know a sixteenth century window by Marcillac, in Arezzo, where the clouds are pink, but one does not notice it, so ingeniously readjusted is his colour scheme. Figures as large as this one at Poitiers and as those at Chartres, were stationed along the clerestory lights of Rheims Cathedral, representing the first thirty-six kings of France, while just below each was the archbishop who crowned him. On July 1, 1429, these ancient worthies, already two centuries old, looked down upon the coronation of Charles VII., with Joan of Arc hard by. This splendid series were destroyed by the Huns, as were also the fine old windows at St. Quentin. Even that cold-blooded brute, Philip II. of Spain, when besieging St. Quentin in 1557, had decency enough to order his artillery to avoid break-

ing the ancient glass; but he only spared it for a later destruction by the "kultured" Prussians.

While in Poitiers one should visit the church of St. Radegonde, not only because of its interesting glass, but because we can there study the transition from the thirteenth to the fourteenth century styles. The borders now become narrower, coloured medallions are being placed upon *grisaille* backgrounds so as to admit more light, and the upper part of the window is receiving more consideration, and therefore more graceful treatment. The figures on this window, taken together, form a picture of the Last Judgment.

Speaking of better lighted interiors, it is to Troyes and its dainty eggshell of a church, St. Urbain, that one must go for perfection in this regard. Once upon a time there was a son of a modest shopkeeper there, named Jacques Pantaléon, who, marvellous to relate, became Pope of Rome. He never forgot his birthplace far away to the north, and there upon the site of his father's shop he caused to be erected, in 1263, a church with walls of stained glass supported by innumerable flying buttresses—one of the marvels of moyenage architecture. Here we have medallions to tell their sacred stories, but surrounded by fields of *grisaille* flooding the place with light.

In the Cathedral of Troyes one finds the medallions in all their glory completely monopolising the choir chapels. They are of a richness one might expect in a city where all Europe yearly assembled for one of the greatest fairs of the Middle Ages—a fair of such significance in luxuries as to have embalmed it in our phrase "troy weight," still used by modern jewellers. Troyes windows became so widely known that one of them, a nave clerestory light from the church of St. Jean, was demanded as part of the ransom of Francis I. after his capture at the battle of Pavia.

Tours Cathedral is another in which one can study the product of the closing years of the thirteenth century. The borders are now distinctly narrower, and even then sometimes the medallions intrude upon them. This feature is best studied at Coutances in Normandy. The interior at Tours always impresses one as unduly narrow, and the reason is that the architect did not here avail himself of the usual device of slightly increasing the interior's width as the walls rose, done to offset the gradual contracting of the perspective to one looking up from below.

Although our visit to France is now drawing to a close, because, with the arrival of the fourteenth century, there will be little in France to compare with its wealth of windows in England, the cathedral of Sées and the great church of St. Ouen at Rouen will repay a visit before embarking for England. St. Ouen is almost completely glazed in one style, and the harmonious whole is most agreeable.

Within the medallions and above the small figures we have, perhaps, all along been noticing little roofs, rather sketchy, but serving to indicate that the scene was indoors. These roofs are destined to develop and play a great part, not only in the drawing of our subjects, but also in the manufacture of the glass and in the amount of lighting it permits. At St. Ouen one sees pinnacles appearing above the people—of course, in the Gothic style then prevailing. Notice that there are as yet no pedestals, and that the figures and their canopies (as these sentry-box structures are called) do not yet aspire to fill the entire window space.

Indeed, at St. Ouen, the canopy is still so unimportant a factor in glazing, that it is sometimes entirely omitted and the coloured figures set quite frankly against a *grisaille* background. Nowhere will we find so complete a series of patriarchs, saints, apostles, bishops, and abbots. It is not surprising that the English should at that time have so greatly admired French glazing. Five hundred square feet of French glass was brought over for Exeter Cathedral in 1302-4, and when more was needed in 1317, they sent to Rouen for it. Nor was this a passing fashion, for the contract to glaze Beauchamp Chapel, Warwick, made in 1447 by the Earl's executors with John Prudde of

Westminster requires that there be used "Glasse from beyond the seas and no Glasse of Englande," so Prudde fetched his material from France.

At Tours we will see an un-French sort of fourteenth-century window, for it is rich in colouring like its contemporaries across the Channel, where no revulsion from the dim interiors of the fourteenth century had been necessary, because English skies had early taught the need of an adequate amount of *grisaille* to admit light. While the French, early in the fourteenth century, swung abruptly to light tints, deepening as the fifteenth century came on, the English (not needing the lighting reform) developed naturally from still strong hues inherited from the thirteenth century on through the fourteenth century, to lighter ones in the fifteenth. In sunny Italy deep colour continued throughout.

Merton College, Oxford, has its chapel glazed entirely in the early fourteenth-century manner, and there the richly coloured figures within equally gay canopies are carried in one great band all around the interior, with much *grisaille* both below and above them, while at the top the windows reach a handsome culmination, in a style that truly deserve its name of "Decorated." These tracery lights were needed as a balance above to the groups of lancets below them, which by this time had come to replace the single lancet of the Early English period.

The balance of colour and light in this work provided an entirely satisfactory interior lighting. We are now coming to a period when a pane often had one colour on one side and another on the other. The French were experts at this and called it *verre doublé*, or lined glass. It was effected by re-dipping a partly blown bubble of glass into a pot containing liquid glass of a contrasting hue—for example, red into blue or yellow into red. When the bubble was cut open and held up to light, the effect of the first combination would be purple, and of the second orange. This process had always been used for red glass, the ruby being always thinned down in tone by a coat of uncoloured glass. Nor were the French contented with but two layers, for I know a fifteenth-century pane at Quimper, down in Brittany, that has six such layers or coats of glazing.

Note the labels starting in front of the faces and swinging gracefully over the head and down the back. The decorative possibilities of these written scrolls or labels were nowhere so well worked out as in Germany. Sometimes one encountered written music similarly introduced, as at Warwick, and at Conches and Caudebec in Normandy.

The treatment of the great East window in Merton Chapel is very pleasing, and this will remind us that, although the huge rose windows of France are for beauty and number unrivalled elsewhere, England may be equally proud of her wealth of splendid East windows. Their great expanse and the beauty of their treatment are as distinctively English as are the great wheel windows, French, or the unencumbered circular apertures called *ochio* (eye window), Italian, or windows showing great depth to their interpenetrated architecture, German.

To visit a bower of light that rivals the Sainte Chapelle of Paris or St. Urbain at Troyes, we must return to York Minster and penetrate to its handsome octagonal Chapter House. Here one sees a glazing that perfectly suits the cloudy skies more frequent in this northern district than in sunny France. The east of the small Dorchester church near Oxford is the nearest rival of the Chapter House in point of lighting. There the stone mullions of the window bear figures which, together with those upon the glass, make up a Tree of Jesse, the mullions themselves serving as the vine. The use of window mullions for this purpose here is as unique as is the wooden frame-work of a house in Joigny, France, likewise depicting a Tree of Jesse.

This York Minster Chapter House dates from the time of Edward II. and III. Your "Decorated" period can show nothing better than the treatment here of the window tops, destined later, in the "Perpendicular" period, to lose their individuality and become

stiffly regular and part of the window below them.

The glazier has here employed four bands of late medallions in colour drawn across a field of *grisaille* enlivened with occasional touches of red and blue. This *grisaille* leans to grey rather than to the more usual greenish hue, and moreover, the quarries are cut into irregular shapes, less monotonous than the commoner diamond panes.

No less delightful than the lofty brightness of the Chapter House itself is the charming L-shaped vestibule leading thereto, entirely glazed at the same time and in the same manner. Its tall lancets are crowded with archaic figures and crude canopies.

Very early in the fourteenth century there occurred a chance discovery destined to revolutionise glazing. In some way (and many claim the credit) it was found that chloride of silver, melted and dropped on glass, would colour the surface golden at that point. This was called yellow stain, and was promptly employed to depict hair, especially of angels, to enrich costumes, etc. But most important was the effect it had upon the development of the canopy, for no longer was it necessary to lead in bits of yellow glass where needed, and therefore the simulated stone structures could be much more easily enlivened and extended by yellow stain than was theretofore possible. It is upon the Bell-founder's window, along the north aisle of the York Minister nave, that there appears the earliest use I know of yellow stain. Winston dates this window 1306 or 1307.

A closer examination shows many pleasing details, among others the appropriate use of bells, so frequent throughout the border. This window, perhaps the finest of its type in all England, was the gift of Richard Tunnoc, Lord Mayor of York, who died in 1330. Above his effigy appears a small picture of the window.

The fine West window, 56 ft. high by 25 ft. wide, presented in 1338 by Archbishop Melton, is as elaborate an example as the "Decorated" period can show of tasteful curvilinear elaboration of a window top. It should be noted that all the nave's aisle embrasures but two, and also all but two of its clerestory ones, retain their original blazing. Indeed, we have here the most extensive remains of English work of the early fourteenth century.

The Lady Chapel of Christ Church, Oxford, shows a considerable advance in the "Decorated" period over what we recently saw at its neighbour, Merton College, for here the canopies are beginning to display a wider sweep and freedom, although still imposed upon a field of *grisaille*.

The borders here are in agreeable proportion to the rest of the window, and the glazing of the tracery lights not so exaggerated as is often seen at that time.

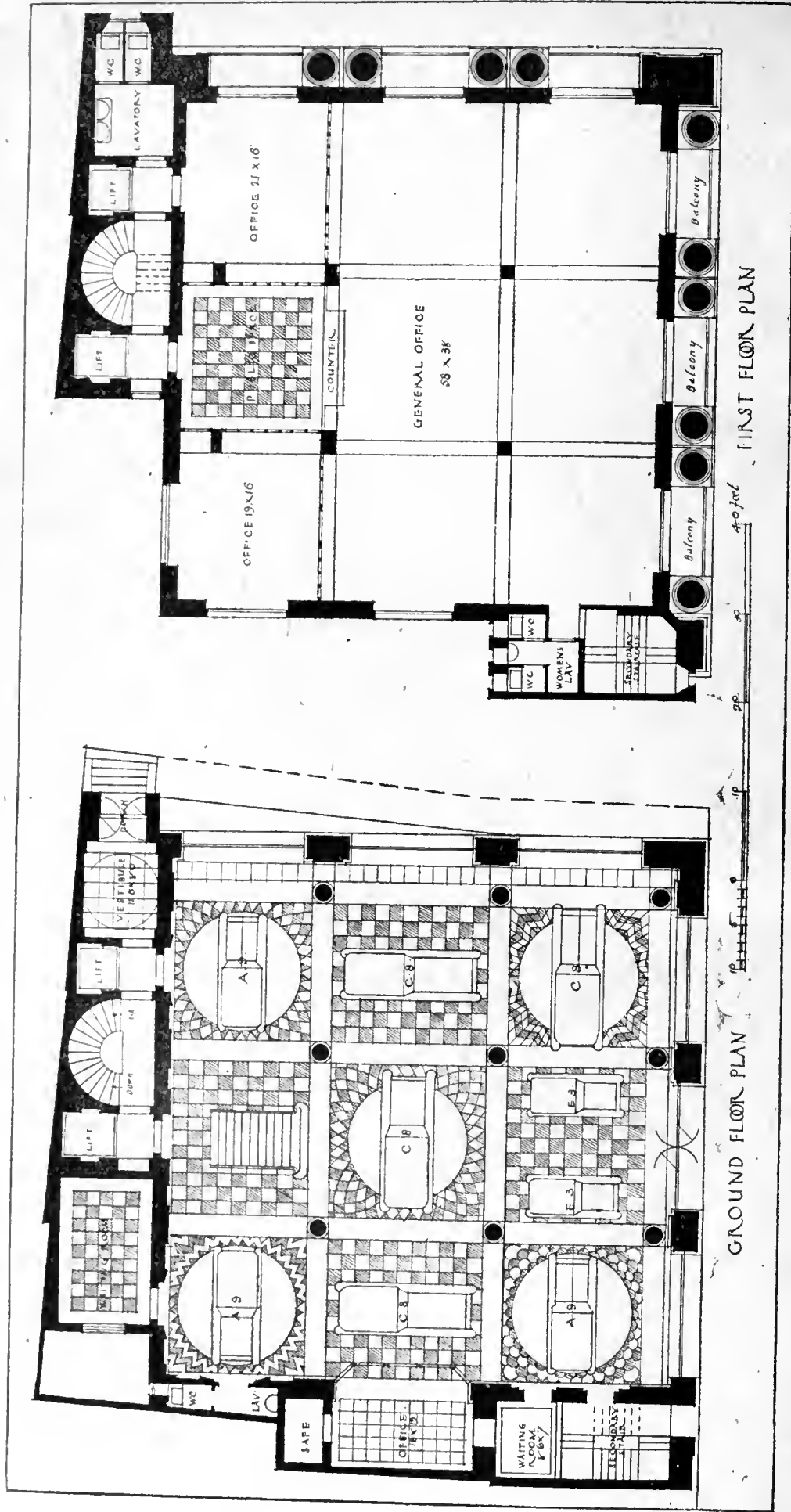
A similar treatment, but one more elaborate in design and richer in colour, is seen in that delightfully glazed sanctuary, Evreux Cathedral, in Normandy. Nowhere else at that time does the border receive so much attention. We have here a favourite French variation of *grisaille*, the so-called quarries, or diamond-shaped (*carre*) panels of uncoloured glass. They were not only easy to lead, but also there formal designs break up the surface agreeably, especially when touches of colour were judiciously introduced, which was often the case. Sometimes quarry windows were surcharged with gay heraldic blazons, but generally quarries filled in the space above and below the canopies, which as yet do not occupy all the lancet.

Returning to York we find in the north wall of St. Dennis' nave an interesting example of an early "Decorated" canopy pushed tight up against the top of the lancet, forecasting how the glazier will presently come to fill the whole of its surface with his picture, and entirely exclude the *grisaille*.

This complete filling of the window with the canopied figures is admirably exemplified in the Antechapel lights at New College, Oxford.

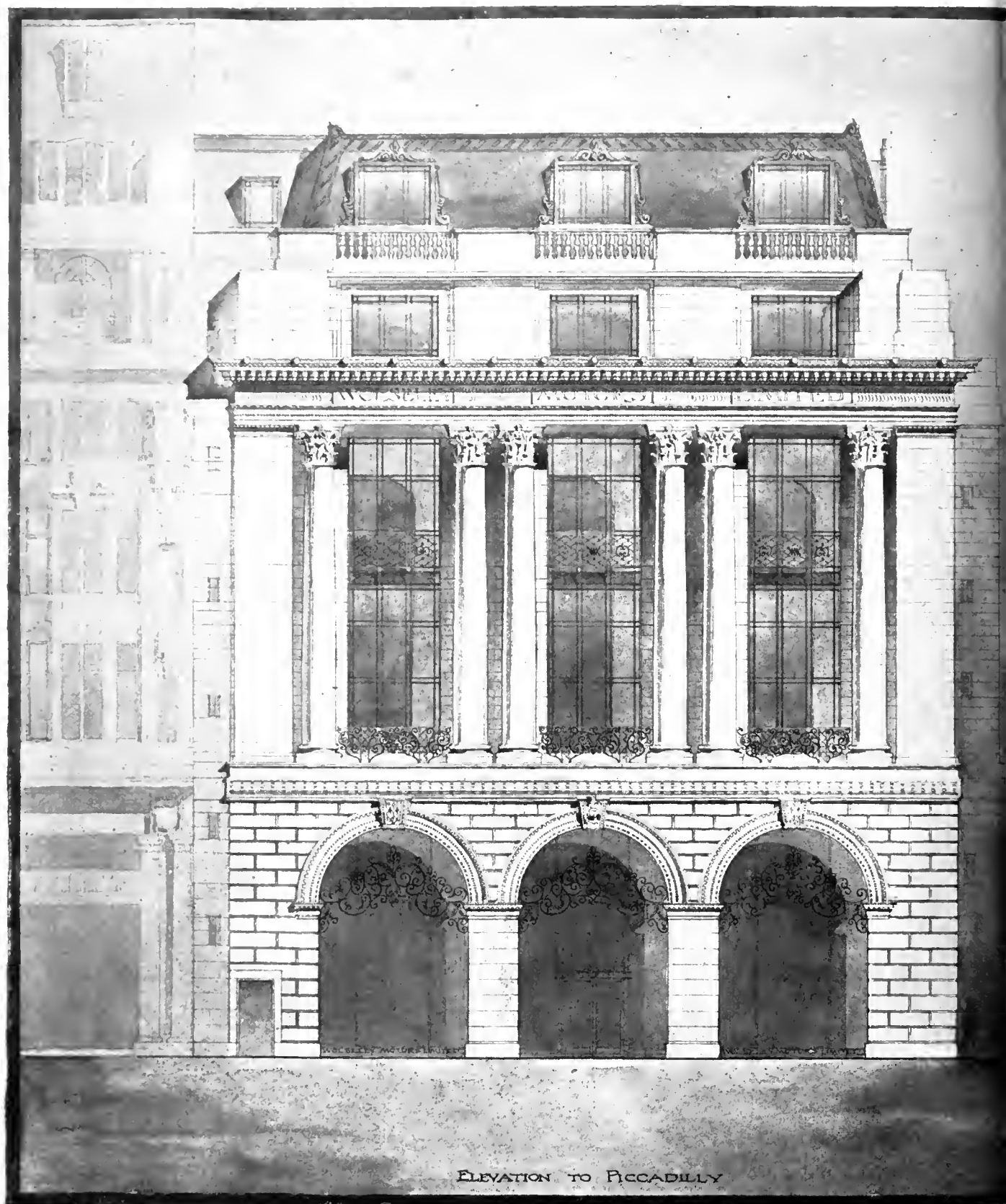
These really mark the transition from the "Decorated" to the "Perpendicular" period, for although the canopies have sufficiently developed to have acquired pedestals

(Continued on page 483.)



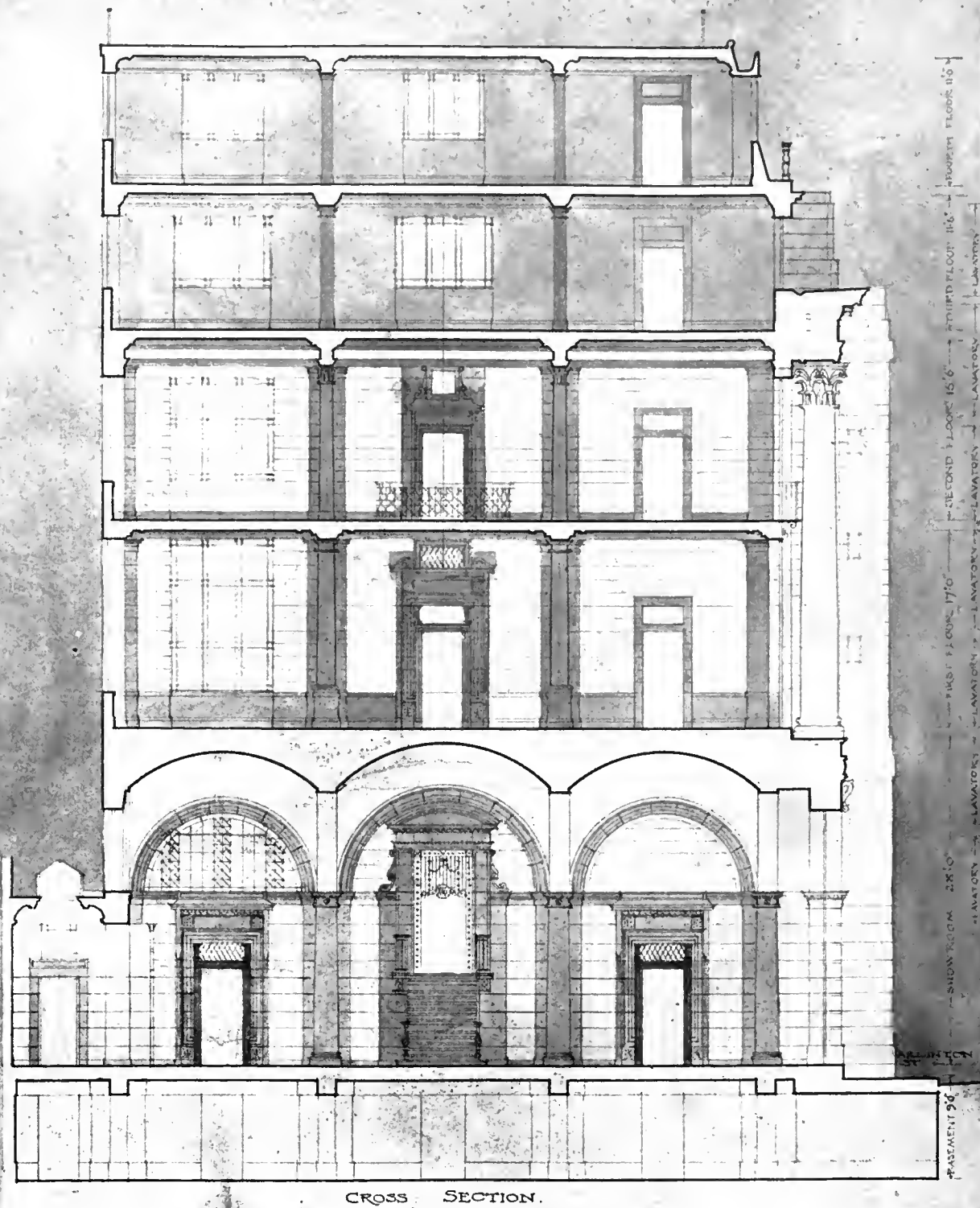
PRELIMINARY DESIGN FOR WOLSELEY MOTORS PREMISES, PICCADILLY AND ARLINGTON STREET, W.
 Mr. W. CURTIS GREEN, F.R.I.B.A., Architect.

483-6

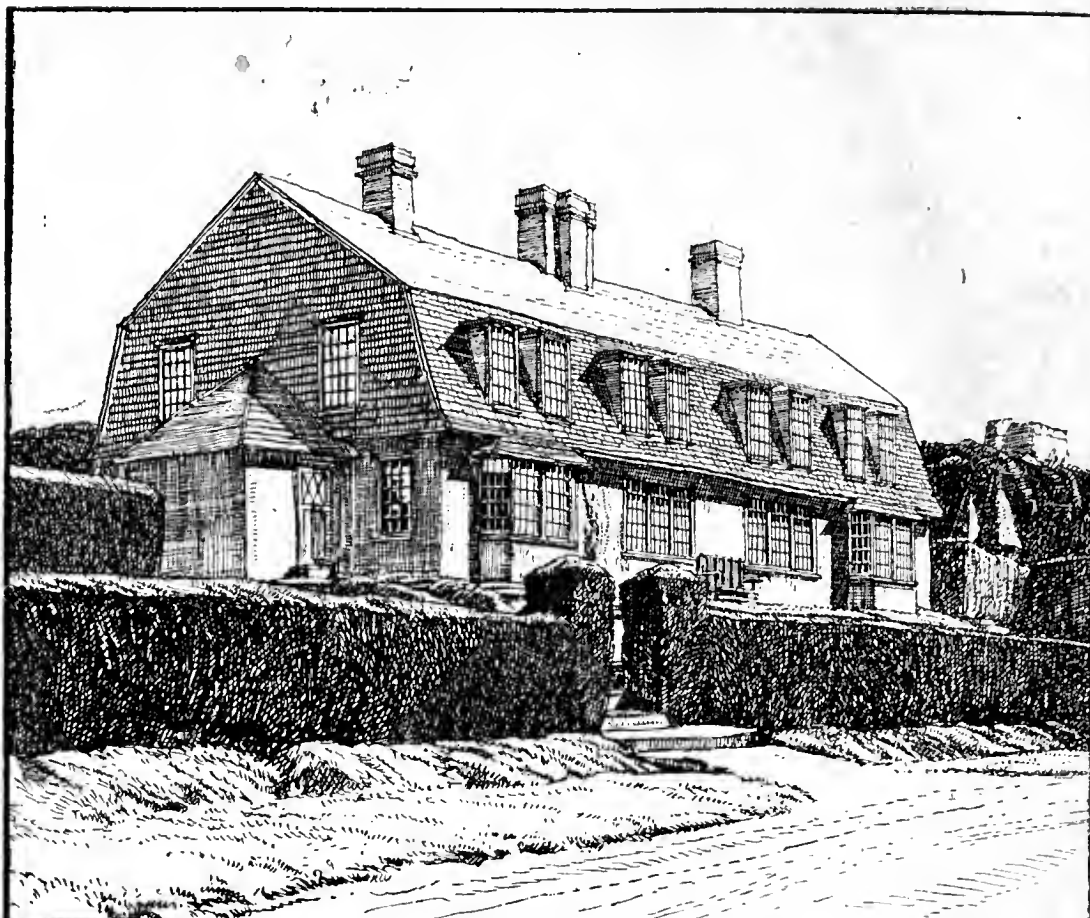


PRELIMINARY DESIGN FOR WOLSELEY MOTORS PREMISES, Nos.
Mr. W. CURTIS G

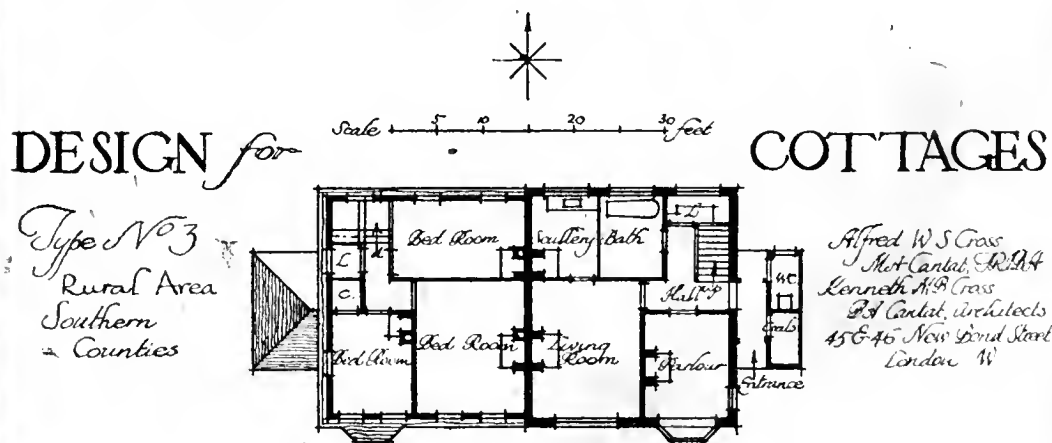
JUNE 25, 1920.



TO 160, PICCADILLY, AND Nos. 1 TO 3, ARLINGTON STREET, W.
F.R.I.B.A., Architect.



View from South West



SEMI-DETACHED COTTAGES FOR WORKMEN, SURREY.

Messrs. A. W. S. CROSS, M.A., V.P.R.I.B.A., and K. M. B. CROSS, B.A., Architects.

(Continued from page 481.)

and to fill the entire embrasure, there is still no perspective shown in their architecture, which is quite flat. Besides, the surface colour is not only smeared on with a brush in the "Decorated" manner, but also stippled on in that of the "Perpendicular" school. We see but a single figure within each canopy instead of the groups that will come later.

The nave of St. Dennis Church, York, shows another advanced example of the "Decorated" canopy light, embellished by a rich border which was lacking at New College.

No more elaborate minarets and spires are to be found in the canopies of this period than in the south-easterly window of St. Martin, Micklegate, York, even though they do not boast of pedestals. Notice that so insistent is the glazier that his *grisaille* shall admit its full quota of light, that the donors' figures thereon are only outlined instead of being full coloured as usual. These donors are going to grow in importance, until in the sixteenth century in France we shall find them unduly intruding upon the religious subject of the window, and even exceeding in size its principal personages. Indeed, at Montmorency, near Paris, Guy de Laval, the donor, occupies the central panel of the Crucifixion window; while at Champigny-sur-Veude, in Touraine, the chapel windows showing thirty-six kneeling donors, all members of the Bourbon Montpensier family, clearly prove how much more attention was then paid to such portraits than to the historical or religious subjects of the window. The English glaziers, however, never lost their sense of proportion in this regard. In Italy donors are almost never seen.

A detail of the two right-hand panels here shows the church's patron saint dividing his cape, in strict accordance with tradition. This window is rendered especially brilliant by the generous use of red in the background.

The south-east window of York Minster chancel is a gorgeous example of this period's glazing, although the mullions of the tracery lights are not so fortunate in their form or their contents as some we have already seen.

The most charmingly glazed of the many small churches of York is All Saints, or All Hallows, as it is sometimes called. Here to the left we can see the space below the "Decorated" canopied saint filled in with a small scene in colour, instead of the pedestal then coming into fashion. Note that the elaboration of uncoloured panes in the canopy tops on the left lets in as much light as does, on the right, the *grisaille* above the less developed canopies below. The right-hand window is, of course, earlier than the other.

A detail from one of the northern lights here shows that perspective is now beginning to appear in the drawing of the canopy.

But now it is time to turn from the "Decorated" to England's greatest period in stained glass, the "Perpendicular," lasting from 1380 to 1500, or from just before the last Plantagenet was succeeded by three Lancastrians and they by three Yorkists, until the accession of a Tudor (Henry VII.) marked the end of the War of the Roses. We shall remember as the chief characteristics of the "Decorated" period, the decorative treatment of the tracery lights, deeply rich colouring, the introduction of yellow stain, the development of the canopy hut without a pedestal, glass with several layers of different colour, increased use of leaves, vines, etc., and shading smeared upon the surface. Now we come to shading which is stippled on, to increasingly lighter and softer tints in England (whilst an opposite tendency is seen in France), greatly elaborated canopies in both lands, and in England stiffly parallel mullions and loss of independence by the tracery lights. The most impressive of all this new period's product is the amazing East window at York Minster, 78 ft. by 32 ft. in expanse. Its only rival is that in Gloucester Cathedral, 72 ft. by 38 ft., commemorating the English knights who fought at Crécy. So huge is this York window that one hardly notices

the gallery leading across the face of its 200 panels of figures. We know all about its construction, for the original contracts, dated 1405, are preserved and call for its completion in three years. It is no wonder that its citizens voted a tun of French wine to the Roundhead Fairfax for protecting their ancient windows when he besieged and took the city. No such decency was displayed by the Huns outside of Rheims, even though it was the best equipped city in the world for purchasing immunity with wine.

At St. Martin's, Coney Street, York, the West window, given in 1447, shows an elaborately complete embrasure of "Perpendicular" construction, complete with the outswinging curved mullions in the traceries to avoid too monotonous an uprightness. Below, where the shadow of an adjoining building might have robbed the figures of their brilliancy or interest, the space is intelligently filled with elaborate quarries.

The detail of this window repays inspection, as showing excellence of drawing and shading. This reminds us that opera-glasses will frequently prove useful on stained-glass tours, and will reveal to us many of those quaint details in which medieval artists revelled. For example, the golden tongues of flame in the Pentecostal window, or the Fall of Manna one at Montfort l'Amaury, near Paris, or the ruby glass used for the Red Sea through which the Israelites are crossing, at Caudebec near Rouen.

We must not be kept from visiting All Soul's College Antechapel at Oxford by Prieux's comment in 1674, that "it is a scandalous place and full of fast gentlemen." It has carefully drawn and coloured lights in the full "Perpendicular" manner. The pedestals have so much perspective as to make them very near to the German Interpenetrated style.

Quite unique is the "Prick of Conscience" window at All Saints, York, showing under their squatty canopies the fifteen last days of the world as described by Richard Rolle, who died in 1349, while below are nine devout donors, kneeling in a row. The story begins at the lower left-hand corner and goes to the right, following the order usually then employed by glaziers. There are, of course, occasional exceptions to this general rule; as, for example, in the south choir aisle at Great Malvern, where, though the story develops from left to right, it begins at the top instead of at the bottom.

(To be concluded.)

Mr. Henry Blackburn, architect and surveyor, of 8, Claremont Road, Tunbridge Wells, late of Dover and Queen Anne's Gate, S.W., has left £12,197 1s. 10d.

The Morgue at Paris is to be reformed, removed, and rebuilt at the Quai d'Austerlitz. The architecture of the new building is "to be not inelegant and in harmony with the tragic purposes for which it is designed."

H.M. Office of Works, having decided to demolish the premises at 6, Lancaster Place, Strand, W.C., Mr. Clyde Young's address will be 6, New Square, Lincoln's Inn, W.C.2, as from June 22, 1920. Telephone No.: Holborn 1772.

The King has awarded the Royal Victorian Medal to Mr. William Miles, of H.M. Office of Works, Windsor Castle, as "a recognition of long and faithful service to the State." Mr. Miles has been connected with the Office of Works at the Castle for forty-six years.

Mr. D. R. Parry, assistant to the late county surveyor of Carnarvonshire, has been appointed to the office of county surveyor at a salary of £600. Quite recently the vacancy was filled by the appointment of Mr. Evans (son of the late surveyor, and now surveyor for Montgomeryshire) by the casting vote of the chairman, but soon afterwards Mr. Evans declined to accept the office.

Professor Beresford Pite, who appealed for the condemned London churches at the Diocesan Conference last week as an architect on æsthetic grounds, moved an amendment expressing disapproval of "any further secularisation of consecrated buildings and sites within the area of the City of London." He was supported by Mr. Basil Holmes. The amendment was rejected.

Our Illustrations.

PRELIMINARY DESIGN FOR WOLSELEY MOTORS PREMISES, PICCADILLY AND ARLINGTON STREET, W.

The plans, elevation and section of this proposed addition to Piccadilly, of which a drawing is exhibited at the Royal Academy this year, are self-explanatory. Messrs. Wm. Cubitt and Co. are the builders. Mr. W. Curtis Green, F.R.I.B.A., of 35, Lincoln's Inn Fields, is the architect. Space for nine cars admirably displayed is provided on the ground floor. The general office is on the first floor with an approach from Arlington Street, lifts being provided on either hand of the staircase beyond the vestibule.

SEMI-DETACHED COTTAGES FOR WORKMEN—SURREY.

This drawing is now at the Royal Academy, shown with the views and plans of the other blocks of similar buildings, reproductions of which appeared in the *Building News* for June 4 last, when we gave a few particulars. Messrs. Alfred W. S. Cross, M.A., V.P.R.I.B.A., and Kenith M. B. Cross, B.A., are the architects of the designs, which are based upon the report of the Tudor Walters Committee issued by the Local Government Board. The perspective is by Mr. Griggs.

Correspondence.

REGIONAL SURVEYS CONDUCTED BY SCHOOLMASTERS.

To the Editor of THE BUILDING NEWS.

Sir,—One of the latest phases of education is the Regional Survey, which has been adopted by some of the more progressive schools.

The surveys are made under the direction of an enthusiastic master, who explains to the pupils, as they halt from time to time in their tramp along the country lanes and the streets of towns, how England has evolved from the earliest times. These teachings include such subjects as the evolution of roads from cowpaths, the formation of rivers, the strata of the earth and its bearing on vegetation and health, and, what will particularly interest the readers of this journal, the study of architecture, both domestic and ecclesiastical.

The Natural History Society connected with the Friends' School at Saffron Walden visited Bishop's Stortford early in June, and I had the great pleasure of entertaining the pupils and of listening to a remarkably instructive discourse. It was interesting to hear the master describing the progress of this ancient town, as he pointed out the features of the flint-walled church, the quaint market square, with its covered-in structures, the remains of the Bishop's Palace, which is near the old ford over the River Stort, the half timbered inns, together with the ruins of the Norman Castle.

Such lessons are bound to benefit the country, and especially the art of architecture, for it is impossible for anyone to study the various styles of buildings and then be satisfied with the bastard architecture which is so prevalent in England.

Any scheme which inculcates a knowledge of architecture is bound to benefit the architect. I am sure that if the architectural societies were to move for a furtherance of this scheme amongst schools and colleges they would be helping themselves as well as making England a more beautiful country.

J. H. KERNER-GREENWOOD.

Bishop's Stortford.

PROFESSIONAL AND TRADE SOCIETIES.

THE ARCHITECTURAL ASSOCIATION.—It is generally found that candidates for admission to the Architectural Association School from the public and secondary schools have received very little instruction in freehand and geometrical drawing. The Council of the Association feels strongly that, although it is not desirable to teach pupils mechanical drawing before their professional training commences, they should be thoroughly grounded in pure line drawing from casts or common objects, shaded drawings, and also in geometry and mathematics, whilst still at school. This preparatory training is essential if students are to obtain the full value of the architectural training provided in the Association's School. All candidates for admission to the School are required to sit for the Entrance Examination, which consists of English composition, freehand drawing from the cast, mathematics (algebra, quadratic equations), and geometry (intersection of solids). A pass must be obtained in freehand drawing from the cast, and in any two of the remaining subjects. The next examination will be held at the Architectural Association, 34-35, Bedford Square, W.C.1, on Tuesday, July 27, 1920. All candidates for the examination must be interviewed by the House Master, Mr. W. T. Ching, with whom an appointment should be made by writing. They are requested to bring with them drawings (freehand or otherwise) for inspection, as evidence of their ability in draughtsmanship. They will be required to produce one of the following certificates:—The Oxford or Cambridge Senior Local Examination, London Matriculation, or other recognised examination of equivalent standard, or a leaving certificate from the headmaster of a school recognised by the Conference of Headmasters, stating that the student has reached the above standard, will be accepted. There are two Entrance Scholarships, one an Open Scholarship, value sixty guineas per annum, open to candidates under the age of nineteen on July 1 of the year in which they compete, and a Public School Entrance Scholarship, value sixty guineas per annum, open to candidates who are pupils in any public school recognised by the Headmasters' Conference, and under the age of nineteen on July 1 of the year in which they compete. The next School Session will commence on Monday, September 27, 1920.

GLASGOW INSTITUTE OF ARCHITECTS.—The Kalendar for 1920-21 and the 51st annual report of the Glasgow Institute of Architects states that the membership now consists of 113 Fellows, 58 Associate Members, and 35 Student Members. Under the new Constitution it is not impossible to continue Lay Members as Members. A Committee has been appointed to consider the increase of the Membership and other matters. The Housing Committee promoted by the Glasgow Corporation is referred to as unsatisfactory. The R.I.B.A. and the various architectural bodies in Scotland banned the competition, but while the members of the Scottish bodies appear to have loyally refrained from competing, some members of the Royal Institute of British Architects took part in the competition and were successful in gaining premiums notwithstanding the ban. It is stated that, "owing to an oversight on the part of the R.I.B.A. Competitions Committee, the veto on the competition was issued in an irregular form which made it impossible for the ordinary action to be taken against their members who engaged in the competitions." The formation of the proposed Chapter of the Institute of Scottish Architects in the Glasgow district will be carried out at meetings of members of the Institute of Scottish Architects to be held for that purpose. Thereafter, steps will be taken to wind up the Glasgow Institute as constituted under the present Memorandum and Articles of Association. This procedure has been rendered specially necessary owing to the necessity for transferring the Alexander Thomson Memorial Trust to the Council of the new body as trustees before the Institute is wound up and the Council, who are the trustees under the deed of trust, cease to exist as such.

MUNICIPAL AND COUNTY ENGINEERS.—The annual meetings of the Institution of Municipal and County Engineers were opened in the Victoria Art Galleries, Dundee, on June 17. In succession to Mr. H. E. Stilgoe, London, Mr. James Thomson, City Engineer, Dundee, was installed as president, who, in the course of his presidential address, said the introduction of mechanical appliances for the execution of public work was never more necessary than now. Dr. P. C. Cowan, chief inspector, Local Government Board, Ireland, in a paper on "Housing," said that so far the system of Government aid to housing under the Acts of 1919 had been comparatively sterile and for obvious reasons. All its methods, except the newest method of aid by grants, repelled and made inoperative the agencies which before the war produced more than 90 per cent. of the small houses in these islands. It provided for making local authorities the builders, owners, and managers of the new houses for the people. These authorities had not the experience to conduct the whole of such business efficiently or safely.

SCOTTISH INSTITUTE OF ARCHITECTS.—The fourth annual Convention of the Institute of Scottish Architects was held at Edinburgh on June 16. Mr. William Kelly, LL.D., A.R.S.A., Aberdeen, President, occupied the chair. The report, which was unanimously adopted, referred to the question of the housing scheme fees, and stated that the Council were contending that the scale ruling in England should be applicable to Scotland. In answer to Mr. Young, the Chairman said the housing fees which had been agreed to for Scotland were exactly the same fees as those in England. Mr. J. Maurice Arthur, Airdrie; Dr. Thomas Ross, Edinburgh; and Mr. C. G. Soutar, Dundee, were elected the Institute representatives to the Council for the ensuing year. The President, in his retiring address, urged the necessity for an extended course of drawing for every student, and an accurate and sympathetic perception and delineation of form. A study of physics was also essential, as well as knowledge of its application to built structures, both theoretical and practical. The vital connection of the teaching of construction with the School of Architecture could only be secured, he thought, when the head was an architect who could and did control the teaching of practical construction. Mr. Alexander N. Paterson, F.R.I.B.A., Glasgow, was unanimously elected and installed as President for the ensuing year. It was agreed that the next Convention be held in Dundee. A luncheon was afterwards held in Ferguson and Forrester's Restaurant, when the new President, Mr. A. N. Paterson, presided. Sir George McCrae, in submitting "The Institute of Scottish Architects," said there was great anxiety, he was told, on the part of the Institute, with regard to the scale of fees. The scale, he pointed out, was practically agreed upon, and Scottish architects would be placed entirely in the same position as their Edinburgh brethren. In Scotland the Board of Health had been urging on Local Authorities to try new methods of construction, and in Edinburgh an experimental building was to be erected. They had as far as possible in Scotland encouraged the use of stone, and there were schemes for stone buildings going on in Elgin, Dumfries, Glasgow, and Edinburgh, and in one case the extra cost for a stone dwelling as compared with another constructed of brick was £117. Having different forms of construction had also the further advantage of utilising all the possible labour. The difficulty of the moment, apart from the miners' strike, was the scarcity of labour. They had 8,220 houses under construction. The number of men required was 18,000, and there were less than 3,000 workmen employed. Criticism had been urged against the Board of Health that they were rather too meticulous in their criticism of plans, but he pointed out that up to the present time no sites acquired for housing in Scotland had amount asked for by landlords was £318,000. The amount adjusted at the date of the last valuation was £227,000, which was a saving of £91,000 on the schemes that had already been sanctioned. This, he thought, justified the Government in saying

that they must save. The President, in reply, said in the Scottish Board of Health the Institute had found a warm friend and a cordial collaborator in recent years.

Our Office Table.

The Warwickshire and Coventry Joint Committee for Tuberculosis met at Warwick, last week, with the intention of accepting a tender for the erection of the large county memorial sanatorium which is to be erected at Hertford Hill, near Warwick, but owing to the fact that the estimates received were more than half as much again as the expenditure contemplated by the committee, no decision was arrived at. The architect was instructed to interview certain firms of contractors in an endeavour to get a lower figure fixed. It was stated that £50,000 had been the amount the committee had contemplated spending on the sanatorium, and Dr. Orton, one of the Coventry members, remarked that the builders' figures absolutely "staggered" him. Other members said that on the basis of these figures the total cost of the sanatorium and its equipment would be in the neighbourhood of £100,000. This, said Alderman Broughton Dugdale, was an expenditure of a kind the country simply could not afford.

At the Crystal Palace War Exhibition, at Stands 151-160, Vickers, Ltd., Vickers House, Broadway, Westminster, S.W.1, have one of the most interesting collections of exhibits, including locomotive crankshaft axles, tires, drop forgings and stampings, motor-car pressings, high-grade alloy steel, tubes and bars, various magnets, laminated springs, rustless steel propeller, and a special hardened steel roll, together with engineers' small tools of every description, concrete brick and tile-making machinery, hand and treadle sewing machines, "Duralumin," the well-known aircraft light alloy; the Vickers sporting rifles and shot gun barrels, standardised joinery, Rene Bull mechanical toys, box-making machines (one stitching machine, one single corner, and one double corner cutting machines in operation), and hydraulic rubbers and hydraulic valves. The various companies associated with Vickers, Ltd., are also fully represented, and Potters, Ltd., and Vickers-Potters, Ltd., of Yeovil, show their semi-Diesel crude oil engines, and Potter Junior engines.

The Dean of Worcester, who has done his bit towards solving the housing problem in Worcester, is apparently being hampered in his further endeavours by the Housing Committee. The Dean states that he was offered, first a part of a site which the corporation has not yet purchased, and, secondly, a site which is at present let for allotments. He says: "I confess I fail to comprehend the action of the Housing Committee. Houses are sorely needed. I offered to help the committee by building houses without throwing any burden on the ratepayers or affecting the appeal for Housing Bonds. I have nearly completed three, have two more well on the way, and am prepared to go on if I can obtain land on which to build, and I have the men ready and willing to build. The Housing Committee offer me first land they have not yet purchased, then land which is let in allotments, and cannot be free for building on for some months. I offer to take a portion of it, and am prepared to make my own arrangements with the allotment cultivators, so as to start building at once. The Housing Committee thereupon impose an impossible condition—a condition they must know I cannot possibly accept; I can only conclude that the Housing Committee do not really want houses built."

The question whether the erection of the King's Norton Palace of Varieties, which had been commenced, should be continued or not at the present time, has formed the subject of an appeal. The Housing Committee, on behalf of the Birmingham City Council, decided that, in view of the existing state of the building trade in regard to the erection of houses, the building of the cinema house

should not be proceeded with, and the contractor appealed against the decision. The appeal was heard last Saturday by the Appeal Court, sitting at the Ministry of Health, in London, and presided over by Mr. Charles, K.C. After both sides had been heard, the President announced the decision of the Court, saying that in view of the peculiar circumstances of the case, and with very great reluctance and hesitation, it had been decided to allow the appeal. The Court wished it to be clearly understood that the decision was based only on the grounds of hardship. The President pointed out that as early as February, 1919, plans were submitted to the City Council for approval, but they were not finally accepted until the following October, and then as originally set out. All the bricks had been obtained by the contractors for the job, very little additional expense in brickwork was involved, and the licensing justices had expressed themselves as particularly concerned with the needs of the neighbourhood which the erection of the cinema would provide for.

An Empire Timber Exhibition will be open at Holland Park Skating Rink, London, W., daily from 10 a.m. to 8 p.m. between July 6 and 17 next (Sunday, July 11, excepted). The exhibition will contain a full range of home and Imperial grown timbers, including those which, up to the present, are only slightly, if at all, known to users of timber in this country. Articles demonstrating the chief uses for which such timbers are suitable will also be shown.

A second edition of "Sanitary Law, with Question and Answer," by Charles Porter, M.D., B.Sc., M.R.C.P. (Ed.), Barrister-at-Law (London, Longmans: Green and Co., 6s. 6d. net), will be welcomed by all who have the first edition, published ten years since, and is recommended to all interested. During the last ten years a good deal of health legislation has come into operation, some of it more burdensome than it is beneficial, but all demanding a full acquaintance with the subject by local authorities and their sanitary officials. Dr. Porter's capably

classified catechism will help all such, and very materially lighten the labour of preparation by students preparing for examinations.

At a meeting of the Council of the University of London Graduates' Association it was unanimously resolved that the Association, recalling the undertaking of the Government on the removal, at their instance, of the headquarters of the University from Burlington Gardens to South Kensington, to continue to provide site and buildings, rate-and-tax free with maintenance and upkeep, and also to make provision for the full extension and development of the University as reconstituted under the Act of 1898, is of opinion that the renewed offer of the Government of land on the Duke of Bedford's estate, accompanied by an undefined maintenance grant, is in no sense an equivalent for the accommodation as at present guaranteed by the Government.

A proposal for the utilisation of Hamilton Palace to relieve the local housing shortage is being considered by the Hamilton Town Council and the Ministry of Health. Instructions have been given to the burgh surveyor to prepare plans showing how the mansion might be turned into a number of two-room and kitchen houses. Originally it was estimated that from £10,000 to £20,000 would be required to restore the fabric, but this estimate will need revision. The palace has been dismantled.

A storm last week had a remarkable effect on St. Chad's Church, Shireland Road, Smethwick. At each end of the church there is some stonework which seems to have been struck by lightning simultaneously. At the end nearer the road there was a lightning conductor, but this does not seem to have acted, for the current found its way into the church and took a circuit of the gas-pipes. At intervals throughout the church the brick and stone work were damaged, one of the main pillars was moved an inch or two, and the aisles and building generally were littered with mortar dust and plaster. The current found its way out by the water-pipe, and at this point a large hole was made in the wall of the church.

CHIPS.

Handel's organ, on which "Messiah" was composed, was sold last week at the sale of the Johnston heirlooms at Kilmore, Co. Armagh, for £231. It is of mahogany carved in the Chippendale style, and formerly belonged to Lord Ely.

We regret to state that Mr. W. M. Fraser, who has been associated with Messrs. Burn Brothers, of Rotunda Works, 3, Blackfriars Road, S.E., for over twenty-two years, passed away on 9th inst. after a serious operation and only a few days' illness. He had a very wide circle of friends in the iron and building trades, by whom he will be greatly missed.

Mr. G. B. Hartfree, late surveyor to the Alton Urban District Council, is to be paid by the Council an inclusive fee of £250 for his work in connection with the housing scheme from the commencement up to the date on which the Commissioner approves the first contract for building. The engaging Mr. Hartfree as consulting architect in connection with the scheme from the latter date is to be considered by the Council.

A rather alarming accident at the new County Hall buildings was happily unattended by any casualties. A girder was being hoisted to one of the topmost stories when something went wrong with the jib of the crane, and the girder descended, lodging itself on the roof of the storey immediately below. It was carefully watched for some minutes while all stood clear in the court below, but beyond a buckling of the girder no further mischance occurred, and the precautions taken avoided any further bad consequences.

Messrs. Pilkington Brothers, of the St. Helens Glass Works, who some time ago bought the Eccleston Estate to develop as a village suburb and provide homes for between 20,000 and 25,000 people, are reported to have decided to discontinue building operations until the cost of building becomes more reasonable. Messrs. Pilkington have almost completed about sixteen houses and about forty wooden bungalows, but the cost of the work is stated to be proving quite beyond what they anticipated. The cost of the houses is very much in excess of £1,000 each, and it was hoped to be able to let them at a maximum of 10s. per week.

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